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ABSTRACT

This packet is designed to help teachers maximize a zoo visit for children ages 5 to 7. The packet provides activities for use before, during, and after the zoo visit. Activities are provided to enhance student skills in language arts, reading, art, science, and math, and are correlated to the Oregon Essentials Learning Skills Common Curriculum Goals which can be found in an appendix to the guide. The packet is divided into seven units, each corresponding to a different exhibit area in the zoo. Each unit includes background information, goals and objectives, instructions for activities, teacher reproducible student handouts, and volunteer chaperone pages. Units one and two introduce the concepts of camouflage and endangered species and are recommended for use as the unifying core activities of the visit. Units are divided into Pre-Field Trip, At the Zoo, and Post Field-Trip Activities. Unit themes are: (1) camouflage (big cats); (2) endangered species (bears); (3) penguins; (4) primates; (5) elephants; (6) Africa (dry riverbed theme); and (7) Alaska. (LZ)



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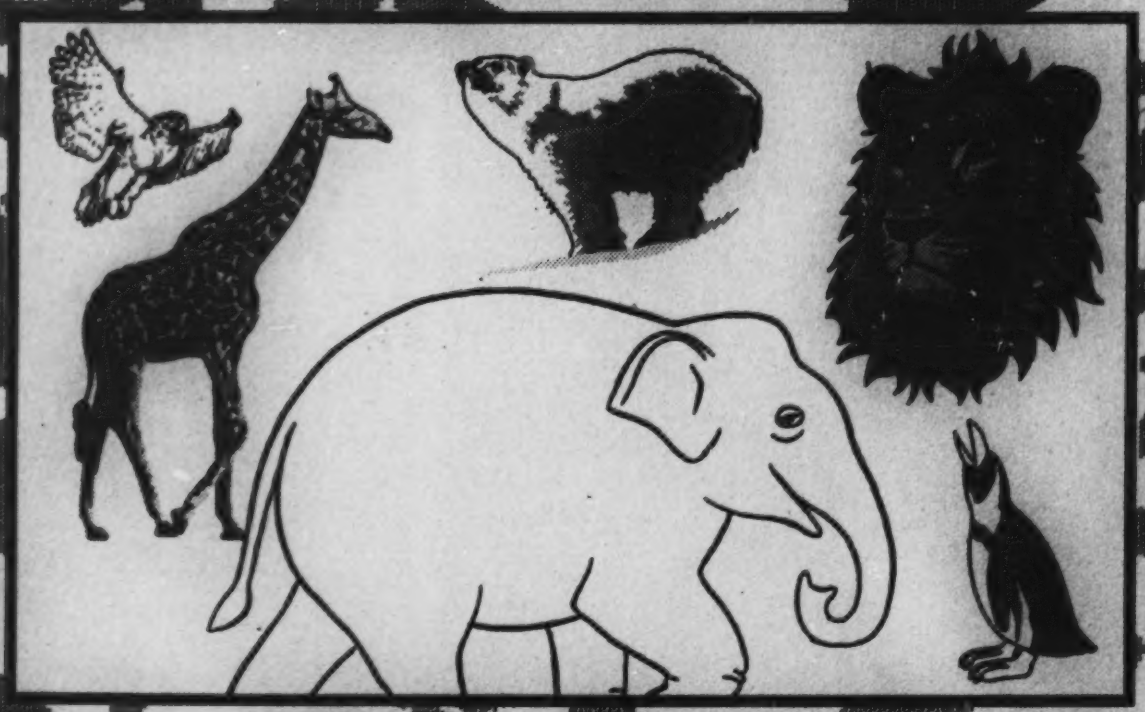
# Kids at the ZOO



The Living Lab
Metro Washington Park Zoo
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and C.F. Swigert Jr. Fund of Oregon Community Foundation.

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# K-2 at the ZOO

Written by Lori Andrews and Steve Andrews

Produced by
Education Division
Metro Washington Park Zoo
4001 SW Canyon Road
Portland, Oregon 97221

1991

The ARCO Foundation is pleased to support the Zoo's "Living Lab" program in order to better the understanding of the positive relationships between Man and Nature.

The zoo appreciates both the ARCO and the Oregon Community Foundations' support of its education programs.

# Contents

Teacher Guide
Unit 1 - "Now You See It, Now You Don't" - camouflage
Unit 2 - "Bears, Bears, Bears!" - endangered species
Unit 3 - "All Dressed Up and No Place To Go" - penguins
Unit 4 - "Not Just Hanging Around" - primates
Unit 5 - "Ever See an Elephant Fly?" - elephants
Unit 6 - "Africa - Water's the Matter?"
Unit 7 - "Northern Lights" - Alaska
Appendix - Correlation to the Oregon Comprehensive Curriculum Goals
- Science
- Mathematics
- English Language Arts
- Essential Learning Skills

# K-2 At the Zoo

## Teachers' Guide

### *Welcome to the Zoo!*

Congratulations in your decision to bring your class to visit the Metro Washington Park Zoo! The zoo is a magical place in the eyes of 5 to 7 year-olds, with wonderful learning opportunities to help children understand and appreciate wildlife and the world around them. Simply visiting the zoo to follow a child's natural curiosity is an enjoyable experience for both children and adults, enjoyed by literally hundreds of thousands each year.

### *K-2 Teachers' Packet*

To help maximize your zoo visit, this packet is designed to provide activities you may select from for use before, during, and after your visit to the zoo. Activities are provided to enhance the skills you teach in a variety of subject areas, including language arts, reading, art, science, and math. More activities are provided to choose from than can possibly be accomplished in a single visit to the zoo. Suggestions for core activities are provided. A correlation of the activities to the Oregon Essentials Learning Skills Common Curriculum Goals can be found in the appendix to this guide.

### *Teaching Units*

The packet is divided into several **units**, each corresponding to a different exhibit area in the zoo. Each unit includes **background information** for you, **goals and objectives**, **instructions** for activities, **student handouts** (for you to reproduce), and **chaperone pages** for your volunteer chaperones to use during the zoo visit. Each unit is divided into Pre Field-Trip, At the Zoo, and Post Field-Trip Activities.



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**UNITS:**

1. Camouflage: "Now You See It, Now You Don't!" (Big Cats)
2. "Bears, bears, bears..." (concept: *endangered species*)
3. Penguins: "All Dressed Up, And No Place To Go!"
4. Primates: "Not Just Hanging Around!"
5. Elephants: "Ever See An Elephant Fly?"
6. Africa: "Water's The Matter?" (Dry riverbed theme)
7. Alaska: "Northern Lights"

Units one ("Now You See It...") and two ("Bears, bears, bears) introduce the concepts of *camouflage* and *endangered species*, with activities that can be carried out at any and all of the exhibits visited at the zoo. These units are recommended for use as the **unifying core activities** of your visit. The other units include more activities to choose from, depending on your personal interests and the specific areas of the zoo you hope to visit.

## *Theme Week*

You may wish to plan a zoo "Theme Week" in your classroom. The units provide a number of activities to choose from in a variety of subject areas for use before and after your visit to the zoo. Although the units divide activities into "before the zoo visit" and "after the visit" categories, many of these can be switched and mixed quite effectively. We recommend that you consider these categories as arbitrary in most cases, with the exception of post-visit activities requiring use of information collected at the zoo. A sample theme week follows:

**Theme Week**

Day 1: Camouflage (Unit 1): Pre-Activities
- "Hidden Picture" books (Language Arts)
- "Crazy Camouflage" (Art activity: create colorful animals)
- Choose others from Pre-Activities, Units 3 - 7

Day 2: Endangered Species (Unit 2): Pre-Activities
Day 3: *Visit the Zoo*
Day 4: Graphs and followup activities to Units 1 and 2.
Day 5: Choose from any other pre (or post) activities.
A good day for one of the art projects (Unit 2: Hey Get ON my train, or Unit 1, Camouflage Mural).

## *Visiting the Zoo*

To ensure the best possible experience, the zoo requires **one** chaperone per **five** students for schools visiting under group admission rates. Included in this section you will find a sample letter to parents to inform them of your field trip, and invite them to serve as chaperones. A short, after-school chaperones meeting to prepare them for the trip is recommended. Share your pre-visit classroom activities with the chaperones, and plans for post-visit activities. Parents will be caught up in the excitement when they see how their students have been preparing for their trip! Review the activities planned for your day at the zoo, and the Chaperones Guide.

In the "At the Zoo" section of each unit, **chaperone pages** are provided to support the activities you select for use at the zoo. Chaperone pages contain instructions and information for the chaperones. In some cases, chaperones will need materials (such as paper and crayons) that you will need to assemble for them prior to the trip. Pull and reproduce the chaperones pages for the activities you choose. Collate the chaperones guide and student pages, and have students create colorful covers for ther "zoo book" before you go!

**SAMPLE**
**Letter to Parents**
**(School Letterhead)**

Date

Dear Parent:

On (date), our class will be visiting the METRO Washington Park Zoo on a school-sponsored field trip. Over the next week, we will be learning about the animals at the zoo and about the concepts of *camouflage* and *endangered species*. We have many exciting activities planned for reading, writing, language arts, science, and art that will involve things we will see and do at the zoo. You can help encourage your child by looking for the school projects brought home for you to see, and discussing these concepts together with them.

Although we always hope for beautiful weather, please be sure to send appropriate clothing for possible changes in the weather while we're at the zoo. Your student will need to bring a sack lunch on the field trip day. Before any student can be released from school, parent permission must be provided. Please sign the enclosed field trip permission slip and return it to school with your student before (date). OR: We have your signed field trip permission slip for this school year on file, and unless we hear from you before (date), will assume this permission extends to our trip to the Zoo.

You are invited to join us for our field trip as a parent chaperone. The Zoo requires a ratio of one adult chaperone for every five students, and your help would be most appreciated. A brief chaperones' meeting will be held here in my room at (school) on (date), from (times). Student work in preparation for their trip will be on display, and a chaperone's guide to the activities you will lead at the zoo will be provided.

Chaperones can look forward to an exciting day, with an opportunity to see the magic of the zoo through the eyes of our children. Please RSVP to serve as a chaperone by returning this letter with your signature by (date). I hope you can join us!

Sincerely;

(Name)
Teacher, (School)

YES, I will be delighted to serve as a chaperone for the (date) field trip to the Portland Zoo! I will join you for the chaperones meeting in your room at (school) at (time) on (date).

Name: Telephone:

TG 4

# Unit 1
# Now You See It, Now You Don't
## Concept: Camouflage

### *Background*

Animals are adapted to their environments in many ways. One of the many interesting and visible adaptations is *camouflage*. Coloration, shape, and markings help animals blend into their environment to ensure survival.

To be a delicious red insect on a green lawn may not be such a good idea! Birds would easily find you. It would also not be a good idea to be a predator whose "neon" colored coat can been seen for miles-- your prey would easily be alerted to your whereabouts. We rarely see bright colors in nature, and sometimes a bright color serves as a warning (such as brightly-colored poisonous insects, whose colors warn birds to stay away).

A polar bear's white fur helps it to blend into a frozen polar landscape. A fawn's dappled spots look like sunlight filtered through forest leaves. Some animals' coloration changes with the seasons: both the ptarmigan and snowshoe hare are shades of brown in the summer, turning to white and blending into snowy landscapes in winter. A chameleon's color changes to match the color of whatever it is sitting on. A walking stick (often on exhibit in the Insect Zoo in warmer months) appears to be just a twig on a branch.

**Felines: the BIG Cats**

Big cats (felines) are graceful and powerful creatures. At one moment they exhibit the same complacent and relaxed behaviors seen in a house cat, in another they can be fierce animals. Stalking in a stealthy manner with keen hearing and sight, they pounce on their prey. Felines hunt mostly at night, but are active in the daytime if necessary. Most live in the warmer regions of the world; Africa, India, Asia, and South America. The Mountain Lion (or Cougar) lives here in Oregon.

**Lions**

Lions are the only felines to live in social groups called "prides". Most lions live in Africa on the grassy plains and scrublands. **Their tawny golden color helps them to remain hidden among the golden dry grassland and scrub.** Lionesses do most of the hunting for a pride, and the male lions generally guard against enemies. Lions feed mostly on zebra, antelope, and other grazing animals. Although they can run fast for short distances, they are large animals and tire easily. Lions will often hunt in groups, chasing prey to hidden members of the pride for the kill.


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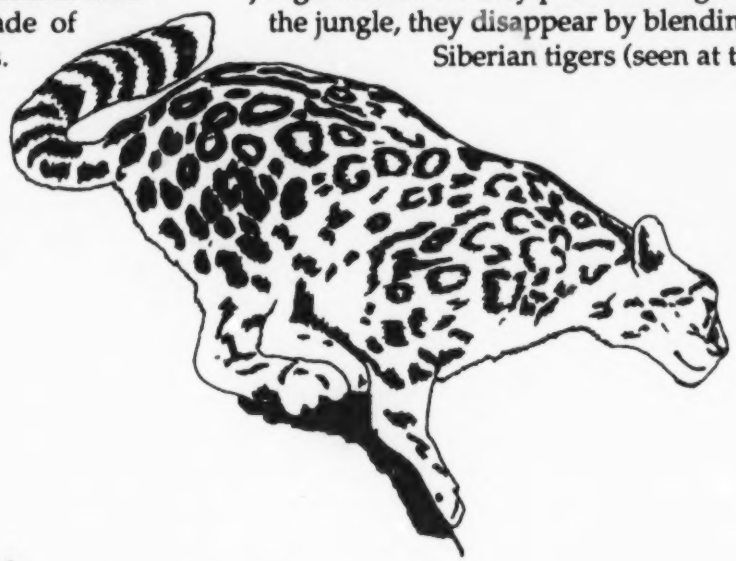
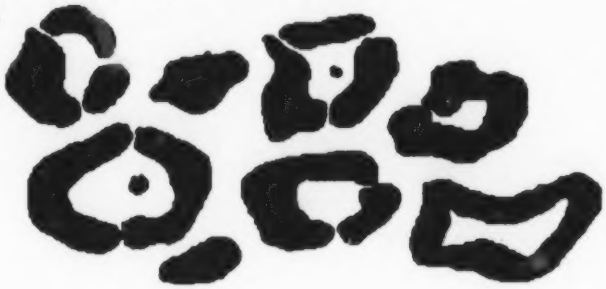
**Tigers**

Tigers live in jungle and forest areas in Asia. Although they are solitary animals, they are not unfriendly to their own kind when they meet, sometimes sharing a kill. **Their stripes help to hide them in their jungle home.** As they prowl through the long grasses or light and shade of the jungle, they disappear by blending in with their surroundings. Siberian tigers (seen at the zoo) are the largest of all.



**Snow Leopards**

Leopards are characterized by their spots. Snow leopards live in the Himilayas and other mountain ranges of central Asia. They have thick fur coats to protect them from the harsh mountain weather. **Their pale coats with black spots ("rosettes") help them to blend in to a rocky, snowy mountain home.**



**Unit Goals and Objectives**

Understand how camouflage is an adaptation which helps an animal to survive in it's environment.

- Explain how camouflage is important to animals.
- Observe and record coloration and patterns in animals.
- Chart and graph coloration and pattern observations.
- Draw an example of a camouflaged animal, and explain how it"hides" the animal.

## *Pre-Field Trip*

**Activity: Hidden Pictures**

Hidden Picture books are a wonderful way to introduce the idea of *camouflage* to young

children. Use these stories as a springboard to read and discuss the background information about camouflage included in this packet. A list to get you started follows:

- The Trek by Ann Jonas. This book is about a trip to school with hidden animals all along the pathway.

- If At First You Do Not See by Ruth Brown, Henry Holt and Co., Publisher, 1982. In this book, pictures appear to be one thing right side up, but when you turn them around, *they become something entirely different!*

- Where's Wallace By Hilary Knight, Harper and Row, Publishers, 1964 (paperback). This is an older version of Hunt For Hector in which a delightful orange orangutan is the main and hidden character who blends into this story well.

**Discussion Questions:**

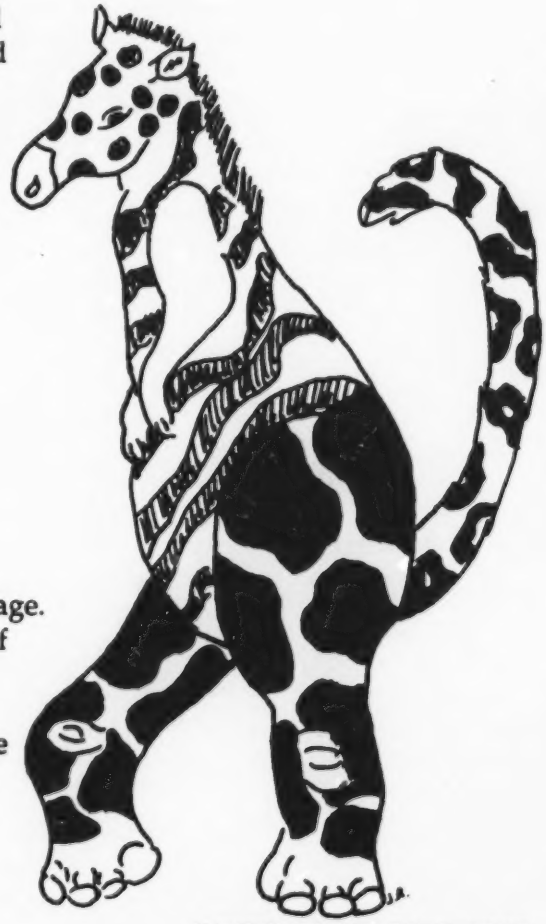
1. What made the hidden animal, person, or creature hard to find?
2. Why do you think it would be important for real animals to be able to hide themselves?

**Activity: Crazy Camouflage**

This art activity sets the stage for awareness and understanding of the variety of colors found in wild animals, and the reasons for these colors. The students artwork will make a wonderful display, and can be sent home with a note to parents to discuss the concept of camouflage (see parent letter in Teachers Guide).

**Materials:**
- multi-colored construction paper (use your scrap box)
- scissors
- glue
- crayons/felt tip pens
- A big dose of imagination!!

1. Read the background information about camouflage. Discuss with students the many different kinds of camouflage that can be found in nature. Solid colors, plain colors, stripes, spots, and combinations are common in nature. Have students name as many examples as they can of animals with each kind of pattern. This can be an ongoing project, assigned to discuss with parents and



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siblings to come back with even more animals.

2. Have students each create a crazy "wild" animal. It can be anything their imaginations can dream up. Students can cut spots, stripes, or other pieces of the animal out of the construction paper and glue them into their drawn outline of the animal done on white paper. They can use the crayons or other media to add any special touches they wish.

3. First and second grade students can write about their animals. A good place to start is to name the animal. Have students write about one of the following:

   - Write a story about your animal. Tell about where it lives, what it eats, what sounds it makes, and what happens to it.
   - Write in detail about your animal's home, and why they are colored and camouflaged the way that they are. Be as wild as you want,with made-up planets and purple trees to hide in, and so on.

**Before You Go...**

Share the chart from the first activity in the section "At the Zoo" below, and go through the instructions for this so that students are ready to start as soon as they arrive at the zoo. You will have a much more captive audience for instructions when they are excited about going rather than when they are "on site" and ready for fun and animals! This will help the chaperones when they arrive at the zoo.

**An excellent reference for wonderful photographs and facts about the big cats: Picture Library: Big Cats by N.S. Barrett, published by Franklin Watts, 1990, $3.95**

## *At The Zoo*

**Activity: Animal Data**

This is the first "core" activity recommended for use at the zoo. By observing and recording information at each exhibit they visit, students will be applying observation, counting, and data collection skills. This data will be summarized later in class.

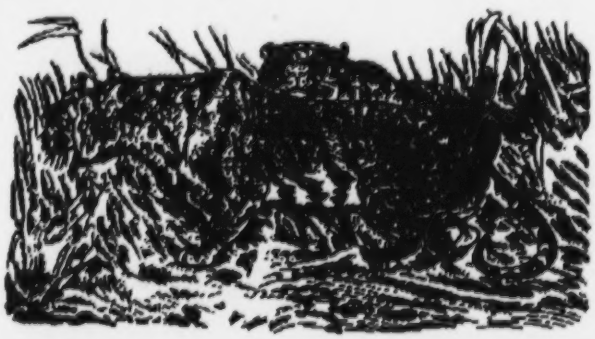
**Materials:**
- Charts (Included in packet for copying)
- Pencils (Save stubs: they fit well into small pockets!)
- Clipboards (Especially if chaperones will take data for students)

1. Starting with the Siberian Tiger inside the main gate at the zoo, have students (or chaperones) begin filling in their charts by writing in the name of the animal in the appropriate column. The actual writing may be done by either the chaperone or the students them-

selves depending on their age and abilities. This may involve some discussion, as many plain colored animals also have spots on their faces! Students should reach concensus within their small groups as to the placement of the animal on the chart. They may wish to take note of combinations of stripes and spots (see example on Chaperone page), but be sure to record the predominant coloration.

2. Continue along the big cats to the lion, and leopards, stopping to look and observe. Have the students keep track in all areas visited. This is a great data collection activity. (Remember: this data will be used in Post-Visit activities).

3. Students should also be watching for "endangered" signs, and should keep track of these as well (see Unit 2 for further information).



**Activity: Camouflage Charts**

After returning from the zoo, work as a group to summarize the data students collected onto a class chart. This is an excellent opportunity to use questioning strategies to review what was seen and done, and move student thinking into higher-order analysis and synthysis.

**Materials:**
- Large blank chart paper
- Graph prepared for placement of data. (see sample)

1. Create a class **chart** to summarize the data collected by students during their zoo visit. This can be done orally as a large class activity, with a record keeper writing the names of the animals on the chart.

2. Make a class **graph** from the chart, showing the numbers of animals found in each category (see example). One way to do this is to assign each student (or a group of students) a camouflage type from the chart to draw onto a cut paper rectangle and then have them glue them onto the graph. Three by five cards work great and save time. Each square represents one animal with a particular trait. Discuss your findings:

**Discussion Questions:**
1. How many animals are in each column? (counting or addition)
2. How many animals in all? (addition)
3. Why do you think there is more of one pattern than another?
4. Are there more patterned animals or plain animals represented?

**Activity: Class Mural**

This is a large-scale art project to summarize what has been learned about camoflage, and share it with others through the creation of a mural display.

**Materials:**
- butcher paper
- paints, crayons, felt tip pens, pencils
- construction paper

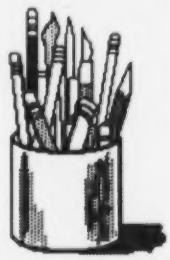
1. Have students work in small groups to create murals that show the examples of camouflage by drawing the animals they saw at the zoo. Have students draw in a background

2. Murals can then be shared with the class by the groups that created them, and displayed for all to see. Groups should explain their mural to the class, making sure that all members of the group help and participate in the presentation.

**Activity: "How the Zebra Got His Stripes"**

This creative writing activity enhances the application of concepts learned at the zoo through language arts.

**Materials:**
- paper
- pencils
- crayons/felt tip pens



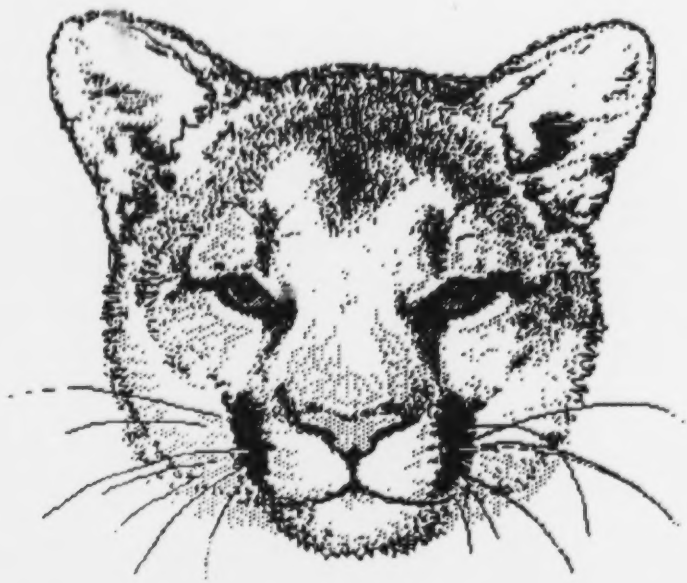
1. Have each student choose an animal to write about. The title of their story is "How the (animal name) got his (or her) (camouflage type)" Students can answer the mystery of their title in either their drawing or their story.

2. The individual pages can then be bound and made into a class book to be shared and enjoyed by all.

3. OPTIONAL: Students can create a mural from their stories with teams producing large illustrations to tell the stories. Placed around the room these would make a colorful presentation.

**Activity: Writing About What You Did**

Have your students write about what they did and learned at the zoo. There is a student worksheet provided to structure their writing, or free writing in journals is also fun. This is great to send home to parents to describe your experience!



# Chaperone Pages:

## Unit 1, "Now You See It, Now You Don't"

### Activity: Animal Data

This is the first "core" activity for your use at the zoo. By observing and recording information at each exhibit you visit, students will be applying observation, counting, and data collection skills. This data will be summarized later in class.

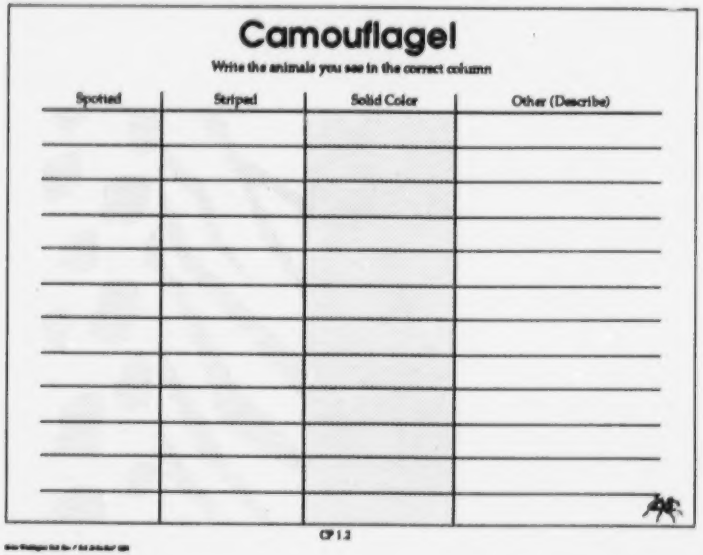
**Materials:**

- Charts (see sample)
- Pencils (stubs fit well into small pockets!)
- Clipboards (Especially helpful if you take data for students)

1. Start with the Siberian Tiger,inside the main gate at the zoo. Have students dictate their observations to you, while you fill in their chart by writing in the name of the animal in the appropriate column (see chart provided). The actual writing may be done by either the you or the students themselves depending on their age and abilities. This may involve some discussion, as many plain colored animals also have spots on their faces! Students should reach concensus within their small groups as to the placement of the animal on the chart. They may wish to take note of combinations of stripes and spots (see example), but be sure to record the predominant coloration.

2. Continue along with your group to the big cats to the lion, and leopards, stopping to look and observe. From this point onward, have the students stop and make observations in all exhibits visited. This is a great data collection activity.(remember: this data will be used in Post-Visit activities).

3. Students should also be watching from "endangered" signs, and should keep track of these as well (see Unit II for further information).



Camouflage!

Write the animals you see in the correct column

| Spotted | Striped | Solid Color | Other (Describe) |
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# Camouflage!

Write the animals you see in the correct column

| Spotted | Striped | Solid Color | Other (Describe) |
|---|---|---|---|
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# Unit 2
# Bears, Bears, Bears!
## Concept: Endangered Species

### *Background*

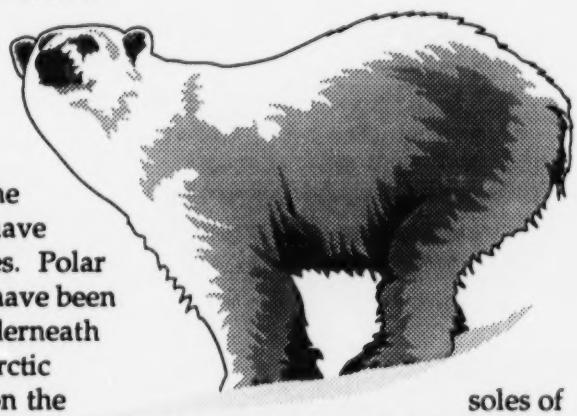
Visitors are often struck by the number of endangered species signs they see posted throughout the zoo. This realization is a sobering experience: most of the animals at the zoo are *endangered species,* meaning their kind is in imminent danger of becoming extinct in the wild. By visiting the zoo and seeing these animals for themselves, students are presented with an opportunity to learn what can be done to prevent extinction of wild species, and how we can act to be certain that our behavior does not contribute to their demise.

**Endangered Species**

Wild species of animals are endangered here in Oregon and throughout the world primarily due to **loss of habitat.** Habitat is "home," providing the food, water, shelter and security that all living things need to reproduce, survive, and flourish. Some habitat losses are natural: flood, fire, volcanic eruption and geological processes alter the landscape. It is the loss of habitat to human development that is the primary cause of endangerment and extinction. When land is cleared for agriculture and other human uses, habitat is lost and wild animals are displaced. For species dependent on a particular habitat for their needs, this loss may be devastating.

Zoos play an important role in the conservation of endangered wildlife throughout the world. The *educational role* of zoos is clear as we plan a visit to the zoo with our students. By understanding the consequences of our actions as individuals, students can learn to act responsibly and make informed decisions. Zoos also serve as a source of captive breeding programs to ensure the survival of species who are not currently successful in the wild. Research is also an important role of zoos, contributing to our knowledge about animal species and how we can contribute to their survival.

**Polar Bears**



Polar bears live in the Arctic region, generally along the coast. They eat sea animals (especially seals), and include berries and plants in their summertime diet. The best swimmers of all the bears, polar bears have large partially webbed feet to use as paddles. Polar bears can swim over 40 miles in a day, and have been spotted far offshore. A thick layer of fat underneath their fur helps them to survive in the cold Arctic temperatures. They also have pads of fur on the soles of their feet to help them stay warm while they walk on the ice. Although their population is now considered stable, they are vulnerable. Most countries prohibit or restrict hunting. Pollution (such as oil spills) and human development of the arctic (especially near denning areas) are the major threats to these bears.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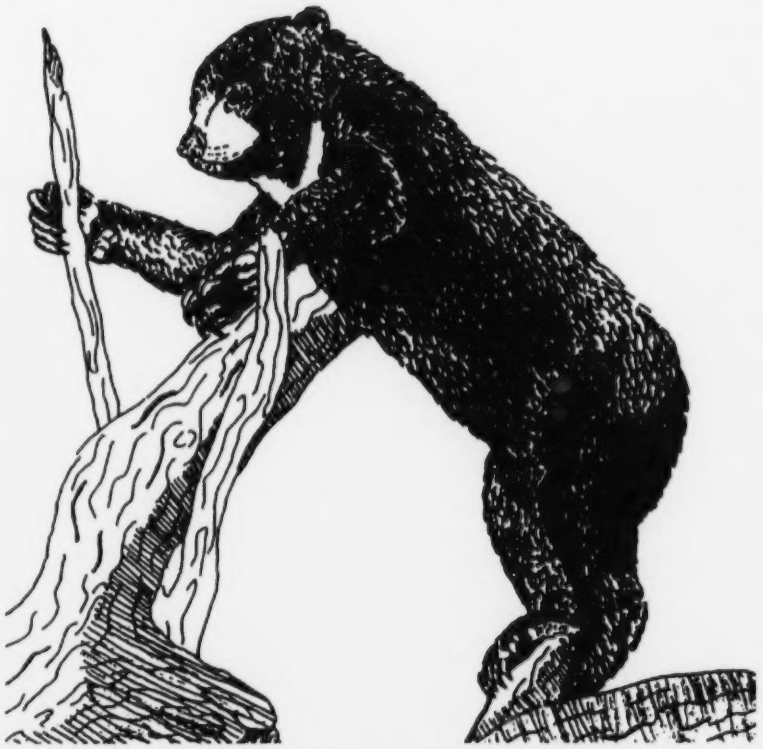
**Sun Bear**



Sun bears are also called Malayan bears. They are the smallest of all the bears, ranging from 60 to 140 pounds (compare to a Polar bear, weighing up to 1400 pounds!). They live in the tropical forests of S.E. Asia, including Malaya, Indochina, Sumatra, and Borneo. They are primarily *nocturnal*, which means they forage mainly at night. Sun bears eat wild fruit, insects, roots, and love to eat honey. Some people call the sun bears "Honey Bears" because of their love for honey. They will rip into a bees nest, and seemingly oblivious to stings, gobble up bees along with their honey! These bears are endangered, primarily due to habitat destruction.

**Unit Goals and Objectives**

Demonstrate awareness and appreciation of wildlife.
- Read stories and poetry about wildlife
- Predict the animal making given animal track prints

Understand the concept of endangered species.
- Observe and record endangered species at the zoo
- Cite two examples why animals are endangered
- Illustrate a picture of an endangered species

Recognize differences between bears
- Observe and record observations of Sun and Polar bears
- Chart and graph observations

## *Pre-Field Trip*

At almost every exhibit you visit at the zoo, you will see *endangered species* signs posted. Many of the animals at the zoo are endangered, most because of loss of habitat due to human development. At the zoo, students will be instructed to keep track of the number of endangered species seen. Chaperones are encouraged to share the reasons for endangerment described at the exhibits. To prepare for this, the following activities may be used to introduce the concept of *endangered species*.

*(Pre-Trip, cont.)*

**Activity: Hey! Get Off Our Train**

1. Read the children's book Hey! Get Off Our Train by John Burningham (Crown Publishers, 225 Park Ave. South, N.Y., N.Y., 10003, ISBN 0-517-57638-4. 1989). This is a wonderful book with outstanding artwork, and a great "twist" in the ending. The story provides a perfect introduction to the concept of endangered species for young children. If your school library does not have a copy, we recommend that you acquire this book.

2. Introduce and discuss the concept of *endangered species*. (see the background information for this lesson). Share the background information with your students, and talk about the animals in the book Hey! Get Off Our Train that are endangered. Make a list of the animals, and the reasons given for their predicament.

3. Show the **endangered** sign included with this lesson. These signs are posted visibly at zoo exhibits featuring endangered species, and the exhibits describe reasons for their plight. Discuss the role of zoos in helping to save endangered animals (see background information). Talk about looking for these signs at the zoo.

4. See Post-Visit Activities for a second activity utilizing this great story.

**Activity: "Corduroy"**

1. Read the book Corduroy by Don Freeman, Puffin Books, published by the Penguin Group, 1988 (paperback, ISBN 0 14 050.173 8). Discuss how Corduroy (a bear) didn't have a home because he was not wanted. Compare to how some **wild** bears are losing their homes because sometimes they're "not wanted". Bears can be dangerous, and may use land someone wants to live on. Discuss how animals need homes too, like people do, and the importance of leaving room for animals.

2. Introduce (or review, if Hey! Get Off Our Train was used) the concept *endangered species* (see the background information for this lesson). If you have not already done so, show the **endangered** sign included with this lesson, and discuss how we will see many animals at the zoo whose kind are endangered. Discuss the role of zoos in helping to save

endangered animals.

3. End your discussion with the following thoughts:

> "Someone wanted Corduroy, and that's how he found a home. People are working to make homes for all animals - someone must care before the endangered animals can be saved. We should all try to learn as much as we can about endangered animals, and what we can all do to help."

**Activity: "There's a Polar Bear in My Frigidaire!"**

Read and enjoy this amusing poem by Shel Silverstein from the book A Light in the Attic, which goes right along with the twist in Hey! Get Off Our Train. The poem can be copied for the children, and/or displayed with their artwork.

1. Draw what a polar bear would look like in YOUR frigidaire!

2. Create a life-sized "frigidare" to post on the wall of your classroom (you may even include a paper "door" if you wish!) Have students each place their picture of a polar bear in the frigidaire.

**Activity: "Who Walked Here?"**

Make an overhead of the animal track student pages included in this packet. Put up the overhead, and have the students write down or collectivley decide or guess as to what animal made the tracks. Save this list to compare it to what was observed at the zoo. (See: "Who Walked Here" Part 2 in "At the Zoo" below)

**Activity: Books about Bears**

A number of wonderful books about bears are available for primary children. Listed below are factual picture books about the bears you will see, and others which are excellent

childrens literature. Make the following books available, or read together at storytime:

Picture Library- Bears, by N.S. Barrett. Franklin Watts Inc, 387 Park Ave. South, N.Y, N.Y., 10016, 1988 (Paperback 1990), ISBN 0-531- 152202. Wonderful information about bears and their lives, filled with color photographs and diagrams.

We're Going on a Bear Hunt, by Michael Rosen and Helen Oxenbury. Margaret K. McElderry Books, MacMillan Publishing Co., 866 3rd Ave., N.Y., N.Y., 10022, ISBN 0-689-50476-4. A classic tale in a read-along large page format, with wonderful color and black-and- white illustrations. Students can act out each part of the trip together, swishing through the tall grass, splashing through the river, squelching through the mud, etc.

The Little Mouse, The Red Ripe Strawberry, and The Big Hungry Bear, by Don and Audry Wood, illustrated by Don Wood, Childs Play International, Ltd, ISBN 0-85953-182-1, 1984. Don't miss this book. Large color format, with illustrations by Don Wood. A tale of an endearing mouse who harvests and hides the strawberry so the big, hungry bear won't find it. His final hiding place is a suprise!

Jamberry, by Bruce Degen, Harper and Row Publishers, Inc., 10 E. 53rd Street, N.Y., N.Y., 10022, 1983, ISBN 0-06-443068-5 (paperback). Magical illustrations of the boy and the bear, the story in simple prose, as they pick the berries and travel through the story.

Mooncake, by Frank Asch, 1983, ISBN 0-590-40623-X. Skyfire, by Frank Asch, 1984, ISBN 0-671-66861-7. Bear Shadow, by Frank Asch, 1985, ISBN 0-671-66866-8. These three Frank Asch paperback books are published by Simon and Schuster, Rockefeller Center, 1230 Ave. of the Americas, N.Y., N.Y., 10020. The endearing character "bear" has some great and wonderful adventures, and learns some valuable lessons about the world.

## *At the Zoo*

**Activity: Bear Observation:**

Observe the bears, paying particular attention to the polar bears and the sun bears. Have chaperones record student responses to take back to class (see chaperone page). Instruct students to watch for behavior as well as color, size and shape. This information will be used later to create a comparison chart.

**Activity: Paw Prints**

This activity is NOT recommended for springtime zoo visits. The number of spring visitors will make it impossible for your students to complete this

safely, and without discourtesy to other visitors. The alternative activity "Who Walked Here, Part 2" below is designed for spring visitors.

1. Imbedded in the cement walkway between the Polar Bear and Sun Bear exhibits you will find the footprints of both kinds of bear. By placing a sheet of paper over a footprint and using a flat piece of charcoal or crayon, students can make a footprint rubbing! (If the pavement is wet, use a crayon and sturdy paper, such as butcher paper or freezer wrap).

**Materials:**
Paper (If rainy, use sturdy white freezer-wrap paper)
Charcoal or crayons (remove paper wrapping on crayons)

2. Caution students not to rub too hard, especially in the center where it is easy to make a hole. Provide your chaperones with the materials to carry with them in the zoo, as footprints in the pathway will be found at other exhibits in the zoo. Each student should get both a polar bear and sun bear print rubbing of their own.

NOTE: The zoo is a special place shared by many people at once. Chaperones must take care that their group is courteous to other visitors by not blocking passage along the pathway while making paw-print rubbings (see Chaperone page). Students will need to take turns to avoid a "traffic jam" at the prints. If a group is already doing rubbings, move ahead to the next exhibit and come back later. <u>This activity will be extremely difficult to do during the zoo's peak season in spring.</u> You might want to consider a fall field trip, or the alternative activity "Who Walked Here, Part 2" (page 2.6).

**Activity: "Who Walked Here?" Part 2**

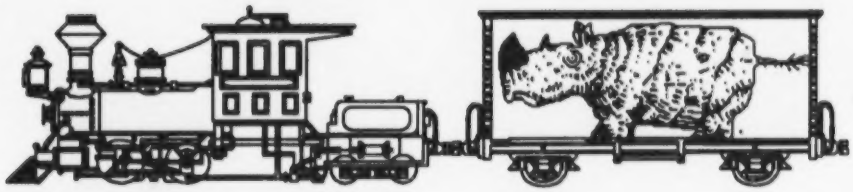
If your visit to the zoo will be in the springtime, the number of visitors at the zoo will prohibit students from making animal track rubbings (see "Paw Prints" above). This activity is an excellent alternative:

All along as you walk through the exhibits, look for and identify the footprints imbedded into the cement. Included in this packet are student sheets that have all of the tracks printed on them. Have students watch for the prints and write the name of the animal in the space provided by the print.

**Activity: Counting Endangered Species**

Count and record the number of endangered species signs students see at the zoo. Chaperones can be "tally keepers" (see chaperone pages). This information will be used again later back at the classroom. Chaperones should take note of the information provided at exhibits, and share with students about the status of the animals, and why they are endangered.

## *Post-Visit*



**Activity: Hey! Get ON our Train**

1. Re-read the story "Hey, Get Off Our Train" (see: "Activity: Hey! Get Off Our Train" in Pre-Visit section above).

2. Have students draw a picture of their favorite endangered animal that they saw in the zoo. Have them cut out their animal for the train.

3. Provide a copy of the student handout. On their handout, students should write (or dictate to someone) why this animal is their favorite, and why must we save it. An alternative is for students to write one reason why this animal is endangered, and one reason why we should protect it.
3. Now comes the fun part!! Make a class train of endangered animals. Use the train copy masters provided in this packet to provide a train car for each child. Have students color their car, then draw a picture of their animal and glue it onto the back of the car so that most of it is sticking out of the car. These can be stapled up around the room for a wonderful display with an important message. Students who finish early can work together on completing the engine for the train.

**Activity: Comparison Chart:**

Create a class chart to compare the Polar Bear and the Sun Bear using the information collected by the chaperones who kept track of the children's observations while at the zoo. The chart will look something like this:

| Polar Bear | Sun Bear |
|---|---|
| White | Black |
| Cold | Hot |
| Big | Small |
| Play in H20 | Climb Trees |

Metro Washington Park Zoo–"K-2 At The Zoo" 1991

*(Post-Visit, cont.)*

**Activity: Footprints, Footprints, Footprints:**

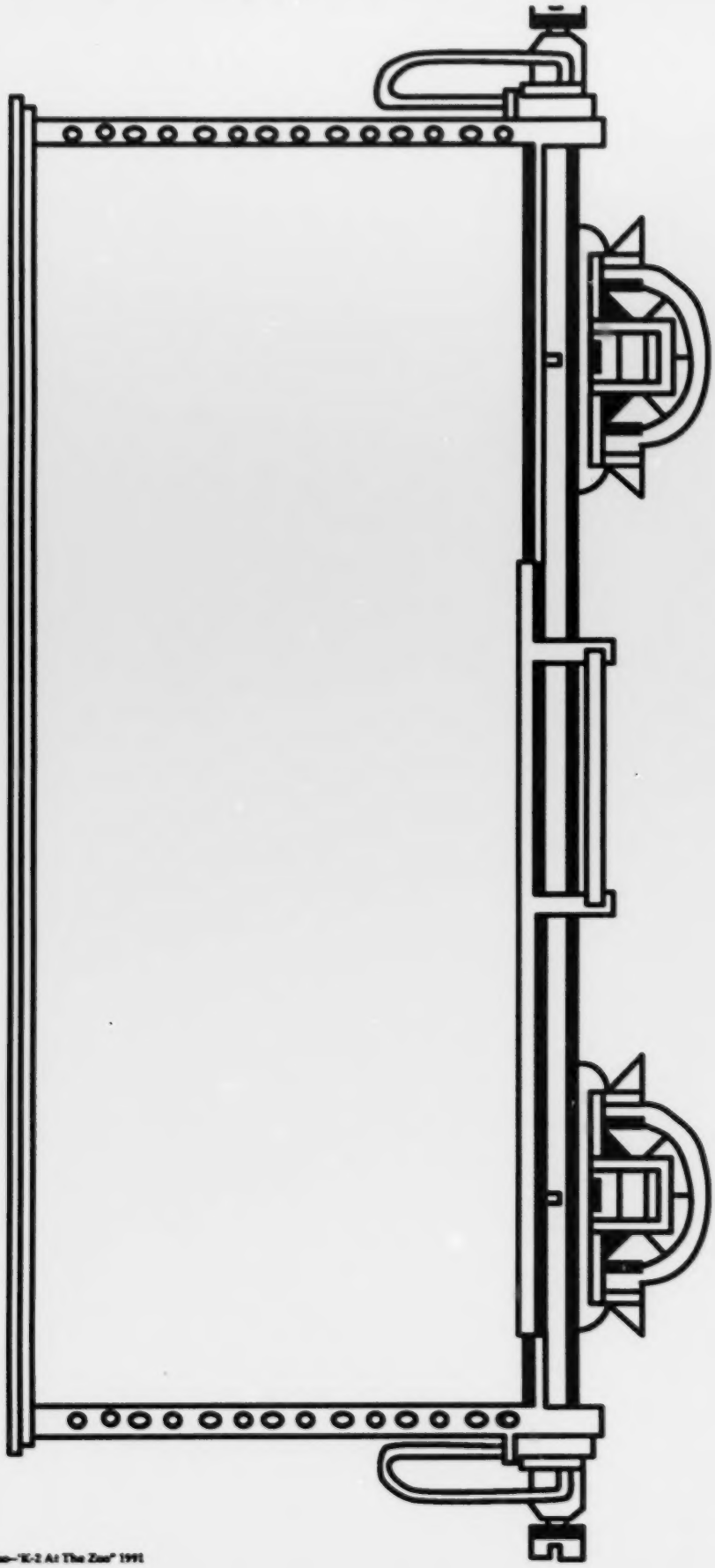
1. Create a "footprint mural". Mount the rubbings from the zoo (or cut out the footprints from the handouts, if rubbings were not possible at the zoo), and display them for everyone to see.

2. Spread a long piece of butcher paper on the floor and have a helper paint a child's foot with tempera paint (Note: a small amount of dish soap such as Ivory Liquid added to the paint helps it to wash off easily). Allow the child to walk across a piece of paper (to take home), then continue to walk across the large butcher paper strip until the prints fade. This continues until everyone has a sheet to take home, and has walked on the mural. At the end of the paper, have a tray of soapy water and a chair. A helper can help wash and dry the students feet.

3. Hang the footprints mural with the footprint rubbings (or illustrations) from the zoo. Compare!

4. Attach an animal footprint (or footprints) to the student sheets, and send home to parents. The kids will love this activity, and their parents will love to compare their new footprint with their footprint made the day they were born.

Metro Washington
Park Zoo



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Metro Washington Park Zoo--"K-2 At The Zoo" 1991

# Chaperone Page

## Unit 2: "Bears, Bears, Bears"

### Activity 1: Bear Observation:

Observe the bears, paying particular attention to the polar bears and the sun bears. Record student responses to take back to class (see example). Instruct students to watch for behavior as well as color, size and shape. This information will be used later to create a comparison chart.

### Activity 2: Paw Prints

**Materials:**

Paper (If rainy, use sturdy white freezer-wrap paper)
Charcoal or crayons (remove paper wrapping on crayons)

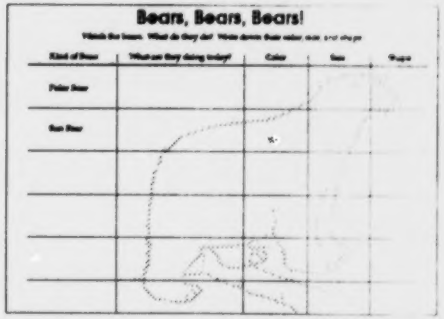
1. Imbedded in the cement walkway between the Polar Bear and Sun Bear exhibits you will find the footprints of both kinds of bear. Place a sheet of paper over a footprint and use a flat piece of charcoal or crayon,to make a footprint rubbing. After demonstrating, provide materials to students, and monitor and assist. Make sure students do not block passage of other visitors.
2. Caution students not to rub too hard, especially in the center where it is easy to make a hole. Each student should get both a polar bear and sun bear print rubbing of their own.

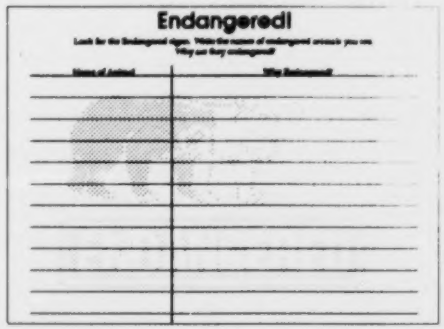
### Activity 3: "Who Walked Here?" Part 2

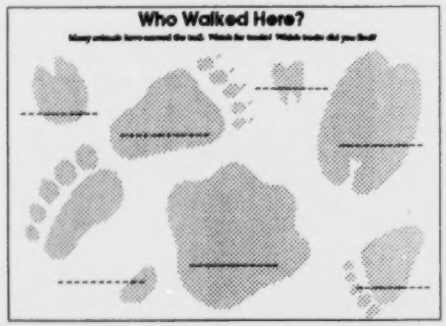
If your visit to the zoo is in the springtime, the number of visitors at the zoo will prohibit students from making animal track rubbings. This activity is an excellent alternative. As you walk through the exhibits, look for the footprints imbedded into the cement. Using the student sheets with animal tracks printed on them, have students write the name of the animal in the space provided by the print (see example).

### Activity 4: Counting Endangered Species

1. Count and record the number of endangered species signs students see at the zoo (see example). This information will be used again later back at the classroom.
2. Take note of the information provided at exhibits, and share with students information about the status of the animals, and why they are endangered.



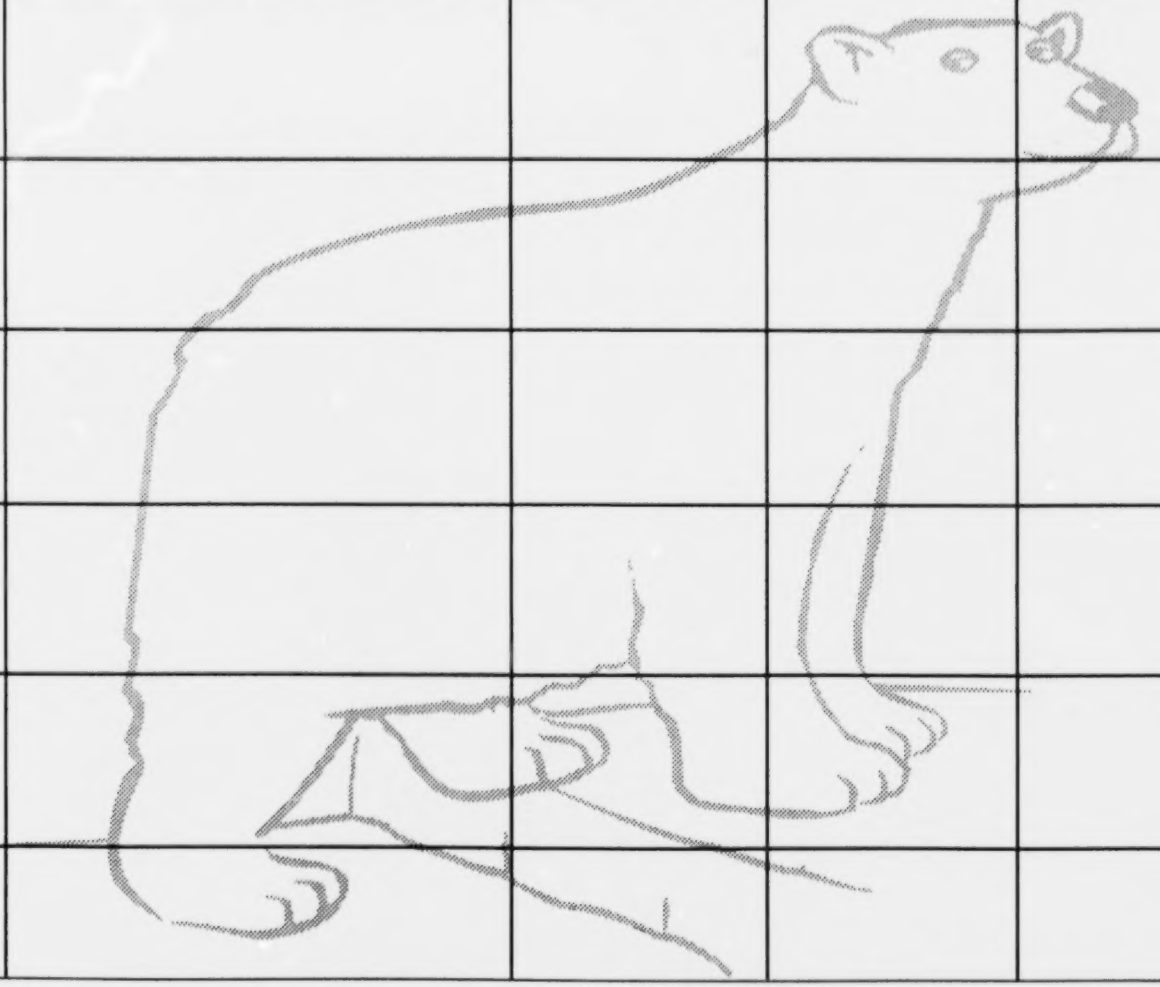




CP 2.1

# Bears, Bears, Bears!

Watch the bears. What do they do? Write down their color, size, and shape

| Kind of Bear: | What are they doing today? | Color | Size | Shape |
|---|---|---|---|---|
| Polar Bear | | | | |
| Sun Bear | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |





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# Endangered!

Look for the Endangered signs. Write the names of endangered animals you see.
Why are they endangered?

| Name of Animal | Why Endangered? |
| --- | --- |
| | |
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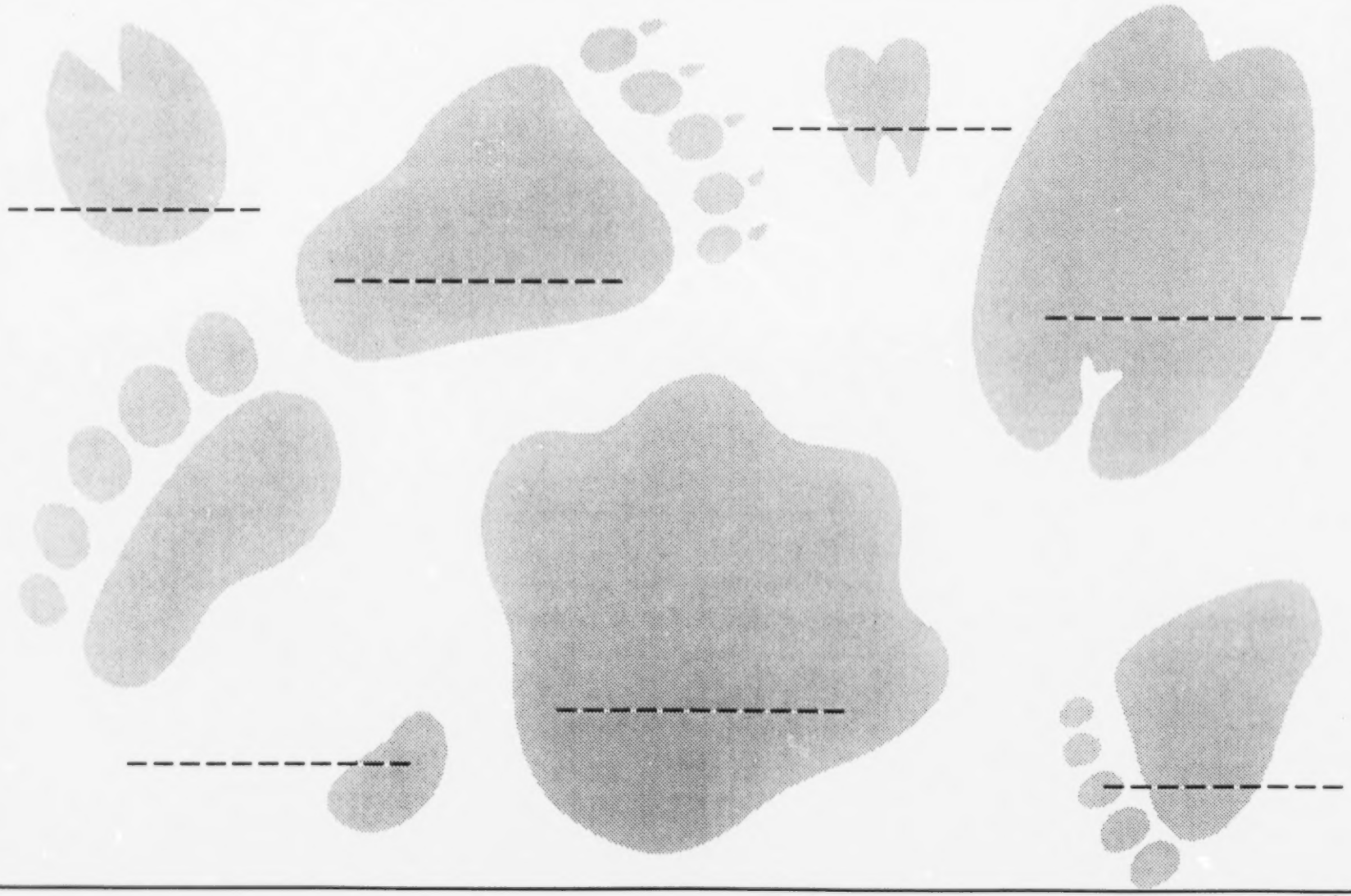
, Metro Washington Zoo -" K-2 At the Zoo" 1991

# Who Walked Here?

Many animals have crossed the trail. Watch for tracks! Which tracks did you find?

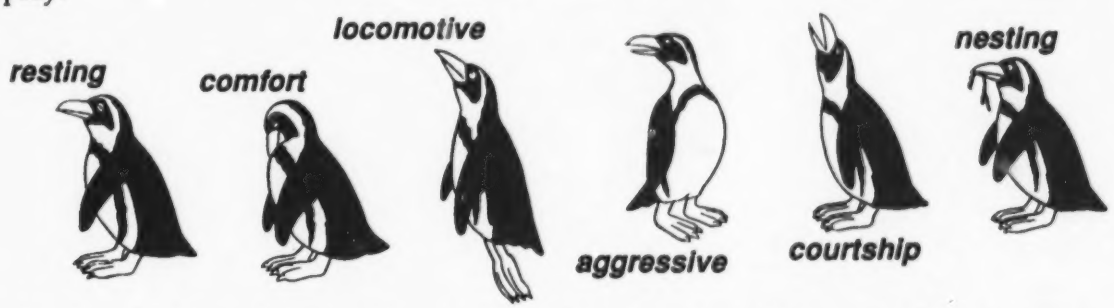


# Unit 3
# "All Dressed Up, and No Place to Go!"
## Penguins

### *Background*

All 18 species of penguins in the world live south of the equator. These birds live in climates varying from the extreme cold of Antarctica to the warm climate of Peru and the Galapagos. Humboldt penguins, the variety on display at the Washington Park Zoo, are a small penguin whose native habitat is off the coast of Peru in the cold ocean waters. To make the water and air temperatures in the exhibit like that of their native Peru, the exhibit is heated to 70° F, and the water is 55°. Speakers have been placed in the exhibit to allow you to hear the birds. Penguins make a very loud braying sound similar to that of a donkey.

Penguins exhibit six major types of behavior. The first behavior is *resting*, including standing, lying down and just floating along on the water. The next type are called *comfort* behaviors, such as, stretching, preening, or just watching what is going on around them. A third type of behavior is the *locomotive* behavior. These are the ways in which the birds get around, including walking, many different kinds of swimming, and the way they get in and out of the water. Penguins also exhibit *aggressive* types of behavior when one penguin invades the territory of another. Included in this group can be sideways stares, gapes, crouching, pecking and charging. Another kind of behavior displayed is *courtship*. Look for ecstatic displays like braying and bowing. Look also for pairs of penguins preening or displaying to each other. The last of the six major types of behavior are *nesting* behaviors. Watch for penguins carrying or re-arranging sticks and occupying the nest boxes within the display.




The black and white coloration of penguins which gives them their tuxedo-like appearance is a unique camouflage adaptation. This pattern allows the bird to be invisible in the water from both above and below. A bird or fish above a penguin, looking down into the dark waters of the ocean would not see the penguin due to its black back, which blends in with the darkness. Similarly, an animal swimming below a penguin and looking up through the waters to the sunlight would not see the penguin because of his white front, which blends into the light background.


Metro Washington Park Zoo--"K-2 At The Zoo" 1991

**Unit Goals and Objectives**

Understand how animals are adapted to their environment

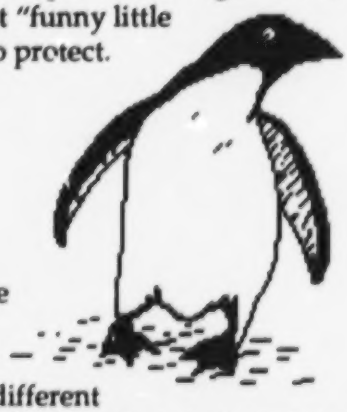
- Compare how people dress in different ways (for cold, rain, etc) to the "dress" of animals.

Understand how each person can impact wildlife

- Describe two things that we can do to help protect birds like penguins.

**Activity: "All Dressed Up and No Place To Go!"**

This activity is meant to give students another look at the unique camouflage adaptation of penguins, and to help them see penguins as not just "funny little men all dressed up," but also as beautiful birds that we need to protect.



**Materials**

- Black and white construction paper
- Scissors and glue

1. Make a chart that has all four of the different seasons across the top and a column for entries into each category.

2. Discuss with students the different ways that we dress for different seasons and even different occasions. List different types of clothing that students bring up that they wear during different times of the year.

3. Compare the different kinds of clothing that students wear to the different types of camouflage that animals "wear". Share the information form the background section about penguins and explain how their camouflage makes them "invisible" in the water.

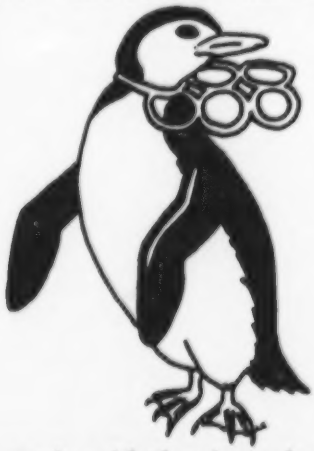
3. To demonstrate the camouflage effect of penguin coloration, cut out matching penguin shapes from black and white construction paper, and glue them together. Place a black sheet of paper on the floor, explaining that this is what the ocean looks like from above. Lay the penguin shape black side up on the "ocean" and note how it blends in. Hold the white paper up high in the air, explaining how this is what the surface of the water looks like from underwater. Hold the penguin shape white side down under the paper, and note how it blends in.

**Activity: "A Tale of Antarctica"**

**Materials:**

- Plastic six-pack rings
- Book : "A Tale of Antarctica"

1. Read the book A Tale of Antarctica, by Ulco Glimmerveen (Scholastic Inc., 730 NW Broadway, New York, NY 10003, 1989, ISBN 0-590-43360-1). This is an excellent book about a family of penguins living in Antarctica. Through the telling of the story, the author discusses all of the things that are happening to hurt the penguins. The story talks about oil spills and how they hurt the animals feathers, plastic six-pack rings and how they get stuck around birds' necks, and other kinds of pollution that hurt the birds.



2. Refer to the picture of the penguin with the six pack ring around his neck and ask students if they know what that "thing" is. When the object has been identified as the plastic rings that hold together a six pack of soda pop, produce one for the students to look at. Talk about how it would be uncomfortable and painful for an animal and that it could strangle the animal because they can't get them off.

3. Demonstrate how to cut the six-pack rings so that all of the closed rings have been cut open, even the small ones in the middle. Help students to see that this is a small way in which they as a child can help the plight of all kinds of sea birds. Discuss other ways to avoid throwing away plastics that might harm birds.

**Activity: Behavior**
Read and discuss the various types of behavior that penguins display from the background section. Tell students to look for these behaviors when visiting the penguins at the zoo.

## *At the Zoo*

1. Visit the Penguinarium and record student observations about the behaviors that they actually observe (see chart provided for chaperone).

2. Continue your observations for Coloration/Camouflage ( Unit 1 activity).

## *Post-Visit*

3. Continue search for endangered signs in the Penguinarium. From the display, find out why Humboldt penguins are endangered, and share with the group.

**Activity: "A Tale of Antarctica", Part 2**

Remind students about the book previously read, A Tale of Antarctica. Discuss the reasons that students found in the Penguinarium display as to why the Humboldt penguins are endangered. Compare those reasons to the ones cited in the book.

**Activity: Mural**

Make a mural of the penguins natural habitat. Have the students each draw a penguin to place somewhere on the background in his home. Have students write two reasons these birds are endangered on their penguin. This would make a great bulletin board!

# Chaperone Page

## "All Dressed Up and No Place to Go"

## Unit 3 : Penguins

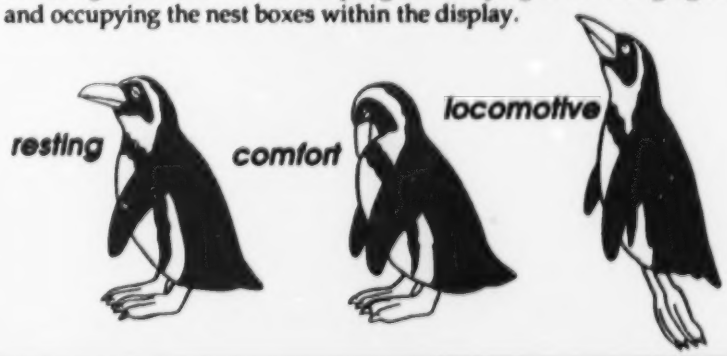
1. Visit the Penguinarium and cue students to watch for the six penguin behaviors described in the background below (use space provided on this page). Cue them one at a time, and check it off on the list when seen by the group.

2. Continue your observations for Coloration/Camouflage (Unit 1 activity).

3. Continue search for endangered signs in the Penguinarium. From the display, find out why Humboldt penguins are endangered, and share with the group.

**Background: Behavior Notes**

Penguins exhibit six major types of behavior. The first behavior is *resting*, including standing, lying down and just floating along on the water. The next type are called *comfort* behaviors, such as, stretching, preening, or just watching what is going on around them. A third type of behavior is the *locomotive* behavior. These are the ways in which the birds get around, including walking, many different kinds of swimming, and the way they get in and out of the water. Penguins also exhibit *aggressive* types of behavior when one penguin invades the territory of another. Included in this group can be sideways stares, gapes, crouching, pecking and charging. Another kind of behavior displayed is *courtship*. Look for ecstatic displays like braying and bowing. Look also for pairs of penguins preening or displaying to each other. The last of the six major types of behavior is that of *nesting* behaviors. Watch for penguins carrying or re-arranging sticks and occupying the nest boxes within the display.




## Behavior Observations

### Humboldt Penguins

Record student observations of penguin behavior:

| Behavior: | |
|---|---|
| 1. Resting | |
| 2. Comfort | |
| 3. Locomotive | |
| 4. Aggressive | |
| 5. Courtship | |

CP 3.1

# Unit 4
# "Not Just Hanging Around"
## Primates

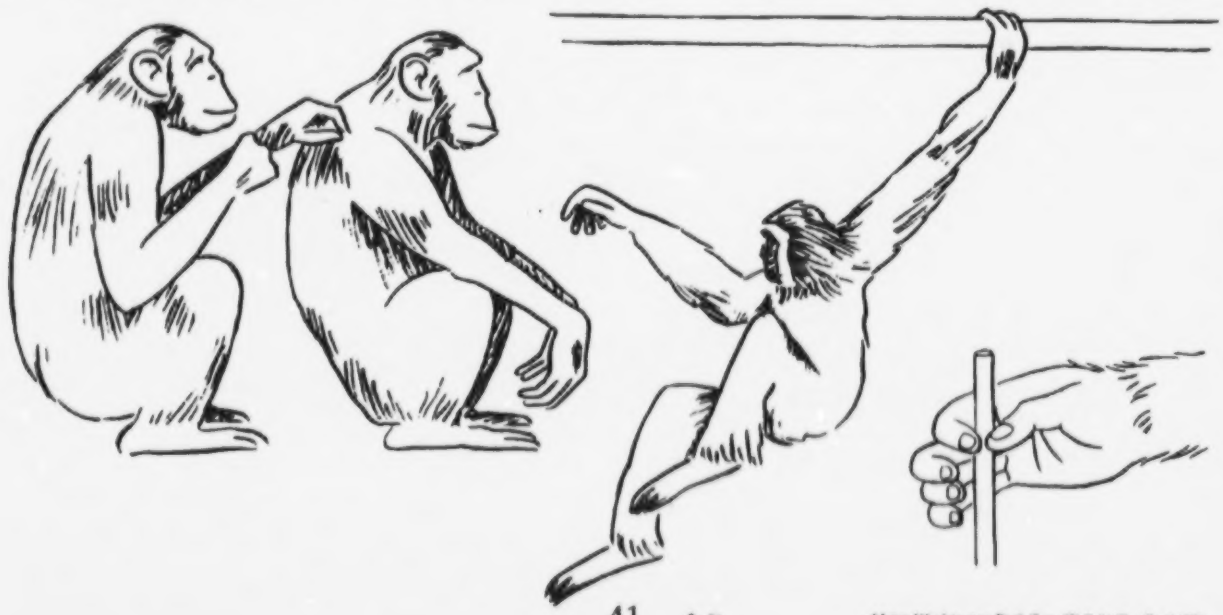
### *Background*

Most monkeys and apes, or *primates,* live in the tropical and sub-tropical regions of the world. Their natural homes are the forests and grassy areas of South and Central America, Africa and southern Asia. One of the main differences between apes and monkeys is that apes have no tails. There are nearly 150 species of monkeys and 4 main kinds of apes. Gorillas, orangutans and chimpanzees are known as "great apes". Gibbons are the fourth kind and are known as "lesser apes".

Apes live in tropical Africa and Asia. They have hairy bodies with no tails, and their arms are longer than their legs. They normally walk on all fours, but in a more upright position. All monkeys and apes except orangutans live in social groups. They spend much of their time foraging for food. Primates are omnivorous, eating both plants and animals. Each species has a unique diet adapted to the habitat in which it lives.

Primates who live in social groups spend a great deal of time grooming each other. They will spend hours preening one another, picking insects or twigs out of a grooming partners fur. Grooming is an important social behavior for primates that is easy to observe at the zoo.

Another important behavior that is easily observed at the zoo is the manner of arm-over-arm locomotion called *brachiation*. The ability to brachiate is best developed in the apes; monkeys have a limited ability to brachiate. Students who love the "monkey bars" at school know what brachiation is all about, and can now learn a new word for this behavior. Important to the ability to brachiate is the shoulder joint that allows the arm to rotate in a full circle, and grip firmly with precision . Without this gripping ability, it could be a long fall from the treetops! This gripping ability comes from the *opposable thumb*, which we share with the primate group.



**Goals and Objectives:**

Understand the concept of an "opposable thumb"
- Experience manipulation without the use of the thumb

Understand "brachiation," and why it's important to primates
- Observe" brachiation" in primates at the zoo
- Experience "brachiation" on the school play equipment
- Use the term "brachiation" in the correct context

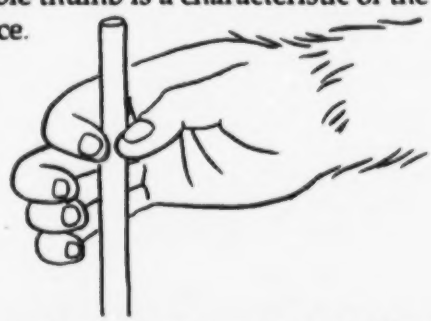
Recognize real and fictional attributes of primates
- Compare story-book primates and real primates behavior

## *Pre-Field Trip*

**Activity: Opposable Thumb**

Many of our abilities and achievements as human beings can be attributed to our *opposable thumbs*. Imagine what it would be like to tie your shoes, write, or hold a tool without the ability to wrap your thumb across your palm! The opposable thumb is a characteristic of the primate group, and this activity demonstrates its importance.

**Materials**
- Peanuts with shells
- Masking tape



1. Tape the students thumbs down to the palm of their hand with masking tape, leaving four operating fingers on each hand.

2. Have your students try to crack open the peanut shells, get out the peanuts, and eat without the use of their thumbs. Take turns --- everybody should try this.

3. Remove the tape and eat peanuts while you discuss the things that we can do because of our opposable thumb. Make a class list of things we can do:

<u>Sample List:</u>
- We can hold a pencil and write.
- We can pick things up.
- We can grab onto and hold a bar, as, a monkey bar.

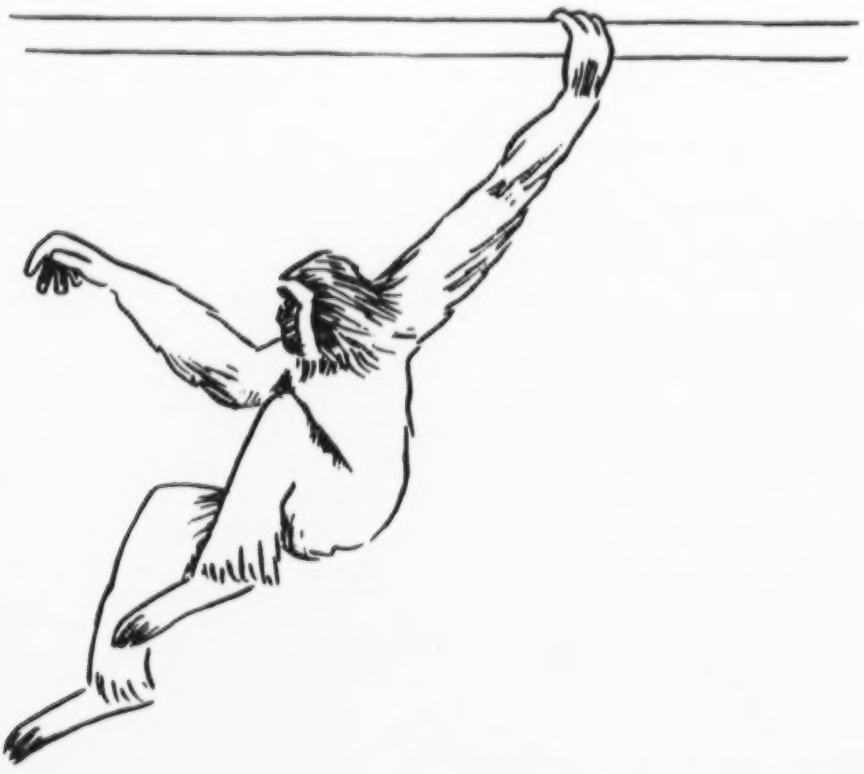
**Activity: Brachiation**

1. Introduce the concept of "brachiation" to the students (See background information). De-

scribe how many primates travel through their homes in the trees by gripping branches with their opposable thumbs, swinging from branch to branch. This form of locomotion is a necessary adaptation for primates who spend much of their lives up in the branches of their forest home.

2. Compare "brachiation" to swinging on the playground equipment (such as the monkey bars) with our hands. Introduce the fact that primates have opposable thumbs on their feet too!! Imagine what we could do on the playground if we had "hands" for feet!

3. Go outside for a recess to let each child have an opportunity to "brachiate" across the monkey bars.



## *At the Zoo*

**Activity: Observing Primates**

1. Visit the primate house and observe the behavior of the primates. Look for examples of the opposable thumb in use, and for examples of" brachiation". The chaperone can record student observations for use in class later.

2. Look for examples of grooming activity. Discuss the concept of grooming: what are the primates doing (social behavior, friendship, hygiene)? Have student count the number of times grooming behavior is observed at the primate house. Have chaperones write down examples of grooming behavior that the students find.

3. Continue observations of coloration/camouflage (Unit 1), adding to the chart that you started at the beginning of the trip.

4. Most of the animals in the primate house are currently on the endangered species list. This is largely due to loss of habitat because of human activities such as mining and farming. Monkeys and apes are also hunted to sell as pets or for use in research, and in some places people hunt monkeys for food. Monkey meat is eaten throughout West Africa and in the Amazon region of Brazil. Many countries contribute to the effort to save these animals, and zoos play an integral role in that effort. Continue search for "endangered" signs in primate house, and record the number you see (from Unit 2). From the displays, share with students why these primates are endangered.

5. Stop at the chimpanzee exhibit to observe the chimpanzees, and the photographs. Have students choose a chimpanzee from the photographs to look for, and read the names to them. Have students look for their chimpanzee (you may need to go to the outside viewing area). Note that not all chimpanzees pictured may always be visible. If one or two are recognized by students, point them out and share with the group. Relate the uniqueness and identifiability of the faces to that of human faces, and how we recognize one another.

## *Post-Visit*

**Activity: Curious George**

1. Read the book, Curious George by H. A. Rey, to your class.

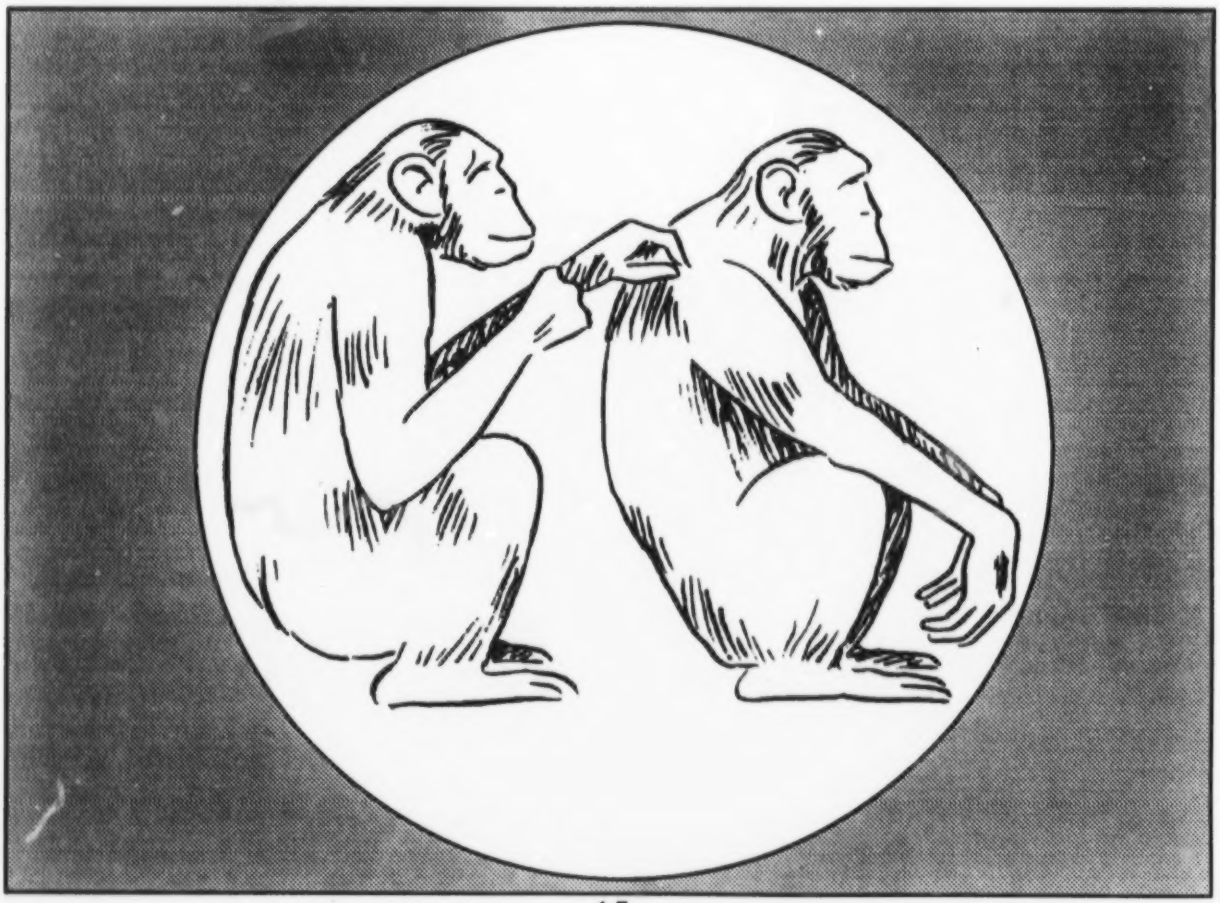
2. George is a curious monkey. Discuss the meaning of the word "curious". Ask the student s what kind of a primate they think George is . Discuss the kind of curiosity that primates showed at the zoo. Did any of them come over to look at their visitors?

3. Make a class list of things that George does in the story. Create another list of the things students observed the Primates doing at the zoo. Compare the lists. What are some of the differences between real animals, and make-believe animals like George?

**Activity: Grooming**

1. Have students start in small cooperative groups and make a list of the things that we do to groom ourselves. Then take the small group lists and share them to consolidate a large class list. Discuss why these grooming activities are necessary.

2. Then ask the students if they can think of reasons why the primates would groom each other. List and discuss the examples of grooming behavior that were observed and recorded while at the zoo. Compare lists.



# Chaperone Page

**"Not Just Hanging Around!"**

**Unit 4: Primates**

1. Visit the primate house and observe the behavior of the primates. Look for examples of the opposable thumb in use, and for examples of "brachiation". The chaperone can record student observations for use in class later.

2. Look for examples of grooming activity. Discuss the concept of grooming: what are the primates doing (social behavior, friendship, hygiene). Have student count the number of times grooming behavior is observed at the primate house.Have chaperones write down any examples of grooming behavior that the students find.

3. Continue observations of coloration/camouflage (Unit 1), adding to the chart that you started at the beginning of the trip.

4. Most of the animals in the primate house are currently on the endangered species list. This is largely due to loss of habitat because of human activities such as mining and farming. Monkeys and apes are also hunted to sell as pets or for use in research, and in some places people hunt monkeys for food. Monkey meat is eaten throughout West Africa and in the Amazon region of Brazil. Part of the reason that it is difficult to protect monkeys is that they live largely in poor countries. Many countries contribute to the effort to save these animals though, and zoos play an integral role in that effort. Continue search for "endangered" signs in primate house, and record the number you see. From the displays, share with students why these primates are endangered.

5. Stop at the chimpanzee exhibit to observe the chimpanzees, and the photographs. Have students choose a chimpanzee from the photographs to look for, and read the names to them. Have students look for their chimpanzee (you may need to go to the outside viewing area). Note that not all chimpanzees pictured may always be visible - if one or two are recognized by students, point them out and share with the group. Relate the uniqueness and identifiability of the faces to that of human faces, and how we recognize one another (see related activity about zebra faces in Unit VI: Africa).

# Behavior Observations

**Primates**

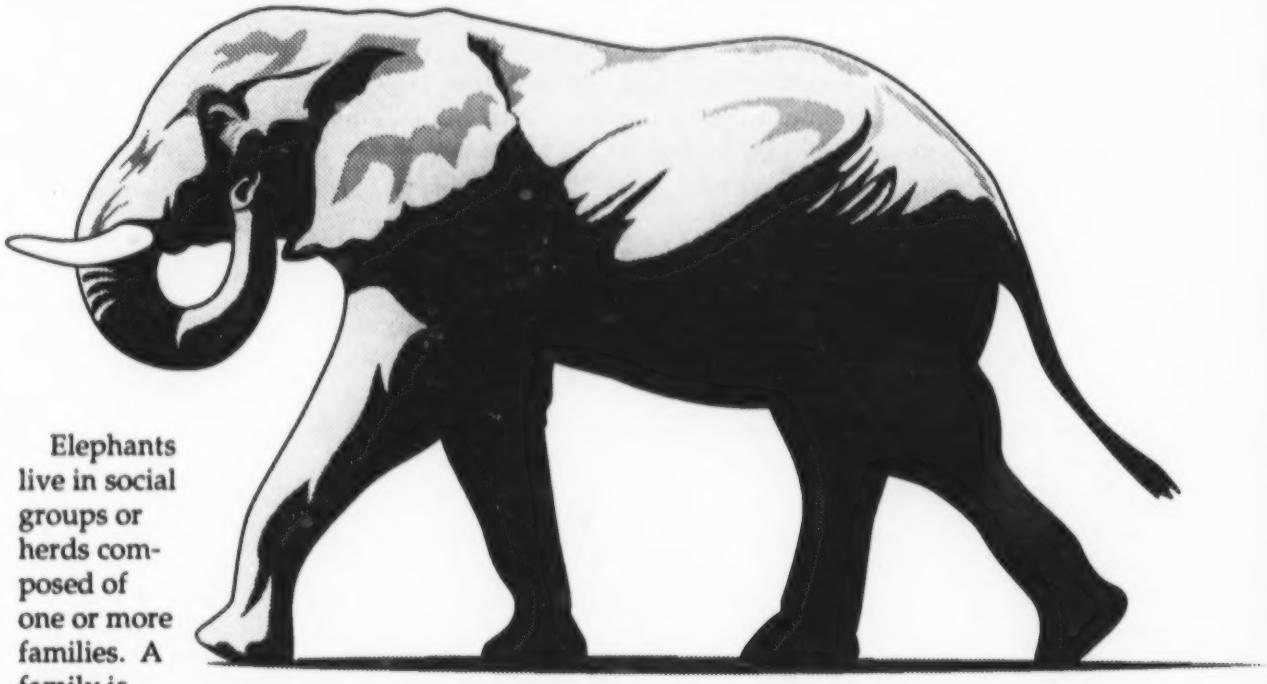
Record student observations of primate behavior:

| Behavior: | Example Seen: |
|---|---|
| 1. Opposable Thumb | |
| 2. Brachiation | |
| 3. Grooming | |

# Unit 5
# "Ever See an Elephant Fly?"
## Elephants

### *Background*

The elephant is the largest land animal in the world. There are two main types: the larger African elephant which lives south of the African Sahara desert, and the smaller Asian or Indian elephant which lives in India, Sri Lanka, and Southeast Asia. Elephants have enormous strength and are very intelligent animals. Elephants are endangered due to loss of habitat, and due to hunting for their ivory tusks. An elephant's tusk can grow up to five feet in length and weigh as much as 40 pounds. All African elephants have tusks, but only the male Asian elephants do. Elephant tusks are constantly growing and constantly wearing down. If the illegal poaching of these animals for their tusks is not stopped, the entire population of African elephants could be wiped out in the near future.



Elephants live in social groups or herds composed of one or more families. A family is made up of several adults and their young. Elephants love bathing, especially in muddy water. They often give themselves a "dust bath" when they come out of the water. This protects them from parasites, and may help to keep their skin supple.

Elephants spend as much as 16 hours a day feeding. They feed on trees, shrubs and grass, eating leaves, bark, fruit and branches. An adult African elephant might eat as much as 440 pounds of food a day! Elephants use their trunks, which are really a combination of nose and upper lip, as a "hand" to put food into their mouth. They are also used for breathing, for drinking (they suck water part way up their trunk and then squirt it into



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their mouth), and smelling. Elephants have a highly developed sense of smell and can smell things as far as 3 miles away. The trunk is amazingly strong and flexible and can be used for everything from lifting heavy logs to plucking a single leaf from a tree. They are also used to touch, and to trumpet.

**Goals and Objectives**

Develop awareness and appreciation of elephants.

- Read a story about an elephant.
- Make a list of wild elephant behaviors.
- Compare wild elephant behavior with a story elephant.
- Observe the uses of the elephant trunk.

Understand why elephants are an endangered species.

- List two reasons elephants are endangered.

## *Pre-Field Trip*

Read the background information to your students (or parts of it) and discuss elephants and ivory. If your class has read Hey! Get Off Our Train refer them to the elephant in the book who said "Please let me come with you on your train. Someone is coming to cut off my tusks, and soon there will be none of us left." Refer to the endangered sign from the zoo (see Unit 1). Discuss the fact that killing for ivory and loss of habitat are the main reasons that elephants are endangered.

**Ella the Elephant**

1. Read aloud the book Ella the Elephant by Bill Peet (Houghton Mifflin Co., Boston, ISBN 0-395-17577-1; ISBN 0-395-27269-6, Sandpiper Paperback edition, 1964).

2. Make a list of the ways Ella uses her trunk throughout the book. Share the background section about elephants and how they use their trunks.

3. What are some things Ella does that a real elephant does not? Make a list, and discuss the differences between real and make-believe elephant behaviors.

## *At the Zoo*

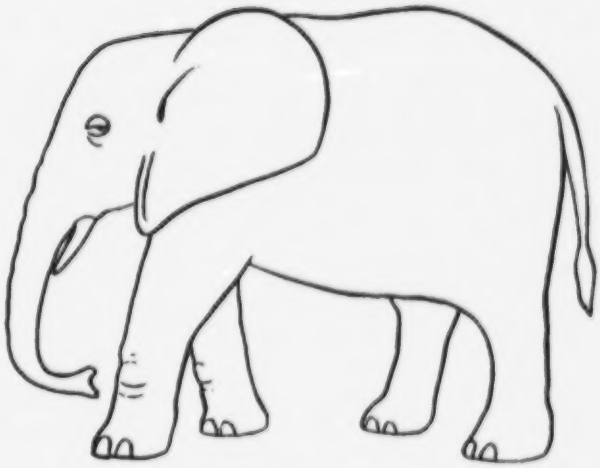
1. Observe the elephants. Watch for signs of playfulness and use of their trunks. Make a list of ways students actually observe elephants using their trunks.

2. Count the number of elephants seen inside and outside. How many are adults? Juveniles? How many have tusks?

3. Look for the endangered signs, and record the elephant on your tally of endangered species seen at the zoo (see unit 2). From the information provided at the displays, discuss the status of elephants as an endangered species.

*(Post-Trip, cont.)*

4. Visit the Elephant Museum at the zoo.



**African**

## *Post-Trip*

**Elephant Ears**

This activity includes whole-body kinesthetic play to encourage awareness and appreciation of elephants.

**Materials**
- grey construction paper
- scissors
- paper clips or bobby pins

1. Have the students make elephant ears out of the construction paper.

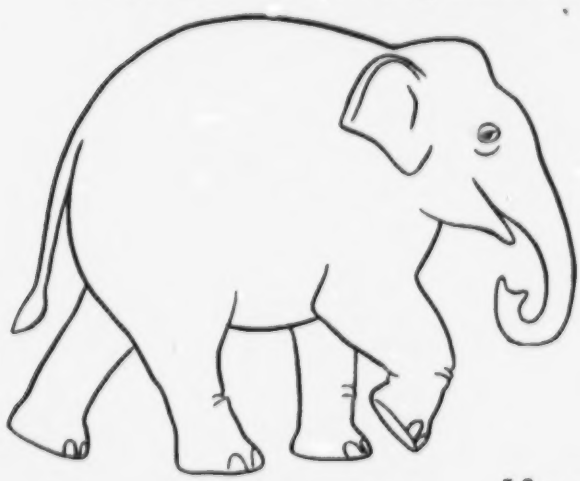
2. Practice the "Elephant Walk" using your arms as a trunk by clasping your hands, putting your arms in front of your face and bending down.

3. Discuss the uses of an elephants trunk as observed at the zoo.

Other books to read and enjoy

Horton Hatches the Egg, by Dr. Seuss. Random House, Inc., New York, New, York, 1940, renewed copyright 1968 by Dr. Seuss, ISBN 0-394-80077-X. Talk about the saying, "An elephant never forgets".

Horton Hears a Who (by Dr. Seuss) This is a fun story about the same loveable elephant, Horton, and how he saves a tiny new creature called a "Who". The moral of the story is: "A creature is a creature, no matter how small". In other words, all animals have a right to live. A very appropriate moral for a zoo visit.



**Asiatic**

# Chaperone Pages

## "Ever See an Elephant Fly?"

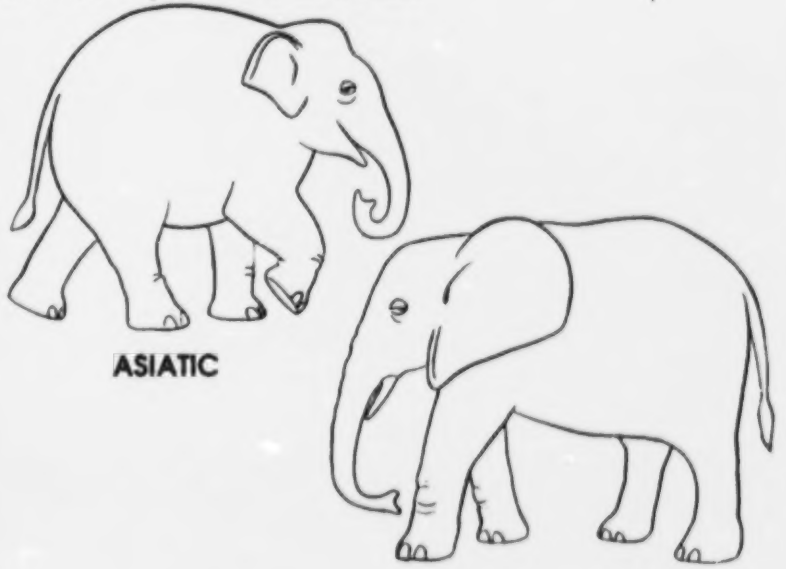
### Unit 5

1. Observe the elephants. Watch for signs of playfulness and use of their trunks. Make a list of ways students observe elephants using their trunks.

2. Count the number of elephants seen inside and outside. How many are adults? Juveniles? How many have tusks?

2. Look for the endangered signs, and record the elephant on your tally of endangered species seen at the zoo (see unit 2). From the information provided at the displays, discuss the status of elephants as an endangered species.

3. Visit the Elephant Museum at the zoo.



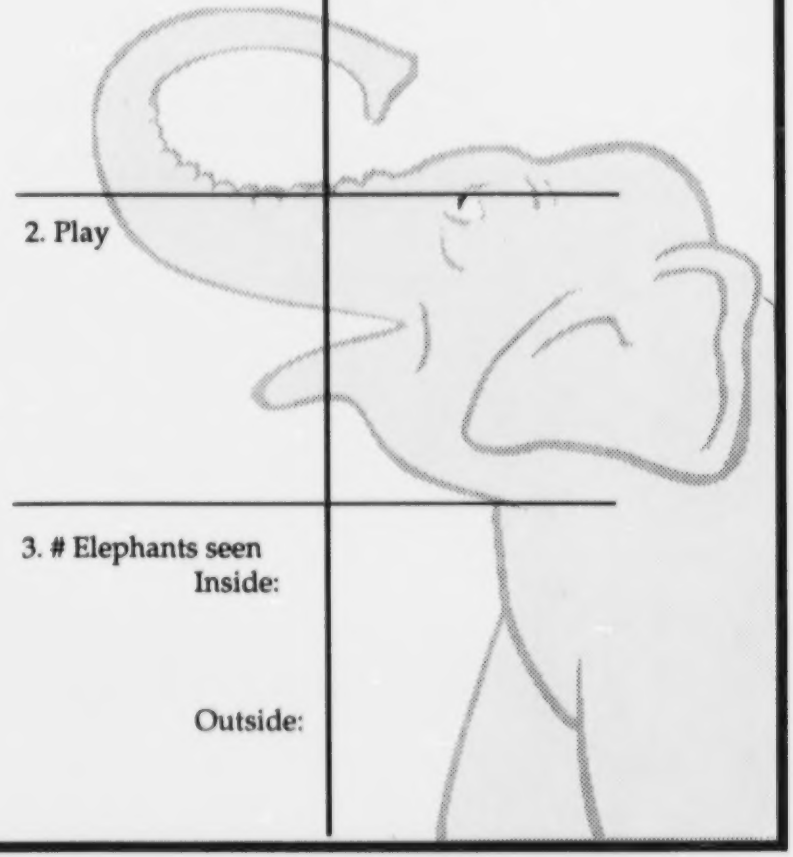
ASIATIC

AFRICAN

# Elephant Observations

**Record student observations of elephants:**

| Behavior: | Examples seen |
|---|---|
| 1. Use of trunk | |
| 2. Play | |
| 3. # Elephants seen Inside: | |
| Outside: | |



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Metro Washington[illegible] Zoo – "K-2 At The Zoo" 1991

# Unit 6
# Africa! "Water's the Matter?"

## *Background*

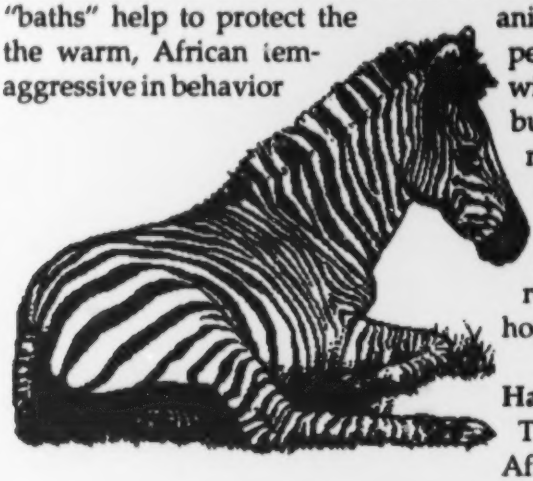
The Africa exhibit is designed around a dry riverbed theme. As you walk through the exhibits, you will notice the dry riverbed with standing pools of water continuing from exhibit to exhibit. During the African rainy season, the river would be full and large. The water flows fast and uproots trees with its power. In the summer, there is no rainfall for many days. The "river" is really no more than a dry riverbed with some deep holes that still have water in them. The bare banks of the riverbed rise above the pools of water.

The dry season is a difficult time for the animals. Animals can't find the water they need to survive, so they must come to the waterholes to drink. The sun is hot, the land is parched and dry. The animals are thirsty. Predators come to the water too, taking advantage of the concentration of prey.

The waterhole can be a dangerous place. Animals like giraffe, zebra, and gazelle who feed on the plants of the open plains are hunted by the predators; lions, hyena and others who eat meat. These predators will come to the waterhole, too. They come not only to drink, but also to find a thirsty, weakened animal to make a meal out of. Animals that come to drink must be very watchful and must not stay at the waterhole for long. Sometimes, there is no cover to hide in around the waterhole. As you walk along, look for dead trees lying on their sides and pools of water left in what was once a "raging river" in the Africa exhibit.

**Black Rhino**

The black rhino is the color of soil due to it's fondness for mud and dust baths. These "baths" help to protect the animal from biting insects, providing cooling from the warm, African temperatures. Rhinos are solitary animals who can be aggressive in behavior without any provocation. They have poor eyesight, but have a keen sense of smell which is their primary method for detecting danger. These animals are herbivores who forage for plants in the wild. The black rhino is considered by many to be the world's most endangered mammal. The reason for this endangerment is poaching for their horn.



**Hartmann's Mountain Zebra**

The Hartmann's Mountain Zebra is native to SW Africa. Zebras are extremely aggressive and not

easily tamed, especially the males. There are two types of herds. One is composed of young stallions, the other is a "family" composed of one stallion, mares, and their young. The mares stay with this group for their entire life, but the stallions are displaced by younger, stronger males.

Zebras have a distinctive striped pattern on their bodies. They have narrow stripes which extend down their legs to their hooves. This stripe pattern is conspicuous and can be used to tell one zebra from another. In the wild, zebras feed on grasses and sedges.

Hartmann's Mountain zebras are the rarest of the four kinds of zebras that are kept in captivity. The Metro Washington Park Zoo is one of only 4 zoos in North America exhibiting this species. These zebras are protected in National Parks, and in the zoos that breed these animals in captivity.

**Unit Goals and Objectives**

Appreciate the difficulty of life in the African dry season
- Read a story about the african dry season
- Create a mural of the dry season
- Observe the dry riverbed theme in the AFRICA exhibit

Compare patterns of coloration on individual animals
- Observe and record coloration and patterns in animals

## *Pre-Field Trip*

**Activity: The Dry Season**

Read and discuss the background information about the Africa exhibit and its theme. This section has been reproduced in larger print as a student hand-out for older students to read themselves, or re-read and discuss with a friend. From the story, create a class mural of the African dry season riverbed.

**Materials**

Africa story handout
Construction paper, drawing paper
scissors
Paints, crayons, colored pencils

1. As a class, read the story of the dry season and the activities around the dry riverbed. Discuss the life of the animals as portrayed by the story. Tell the class how the Africa exhibit at the zoo is designed around the riverbed theme. Ask the students what they might expect to see ther
2. Divide the class into small table groups, and provide art materials for construction of a

class mural. Instruct each team to create a picture of the animals near the dry riverbed the way they picture them in their minds from the story.

3. Keep the student artwork for completion of the mural after the zoo visit.

### *At the Zoo*

1. Read and discuss the black rhino photographic display. Show the students the pictures of the black horn ornaments and compare this to the ivory of elephants. Discuss the relationship of poaching to endangerment of animal species. Record the endangered sign at the exhibit in your count of endangered animals seen at the zoo (see Unit 2).

2. Continue your Camouflage/Coloration charts (see Unit 1) and endangered counts (Unit 2) throughout the display.

3. Stop along the way and observe the examples of African native motif decorations. Discuss patterns that you find in the work. Have students sketch their favorite patterns on paper to include in the class mural at school.

**Materials**
Drawing paper
Crayons, charcoal, or pencils

### *Post-Visit*

4. More animal tracks will be found imbedded in the cement pathways of the Africa! exhibit. Continue your "Animal Track" record using the activity sheets from Unit 2: "Bears, Bears, Bears," or do rubbings of the footprints found within the Africa display as discussed in Unit 2.

**Activity: African Animals**

1. Design your favorite African animal using only brown, white or black. Use some of the patterns you saw in the exhibit to fill in the outline of your animal.

2. Draw your favorite African animal. Write three facts about that animal. Tell why it is your favorite.

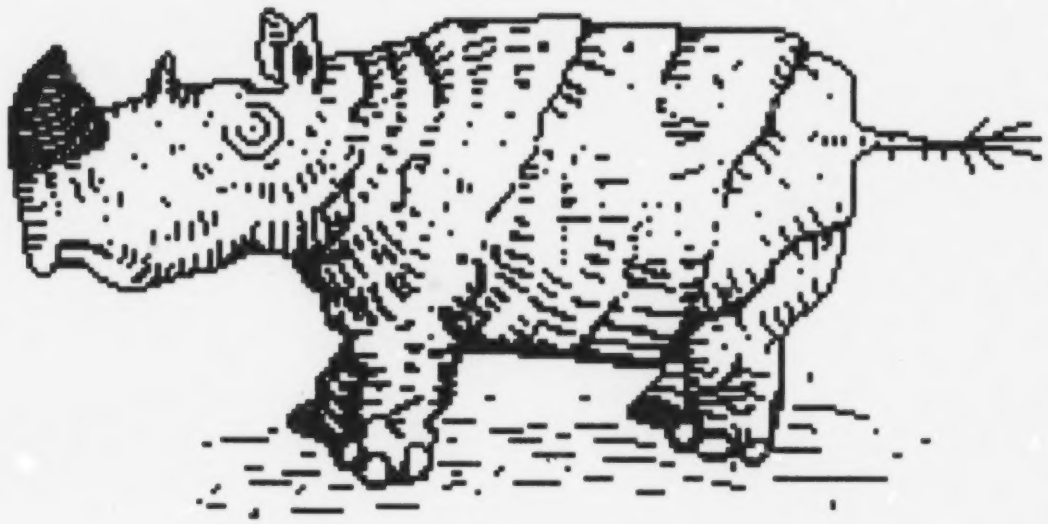
3. Complete the class mural, creating a frame or border for the display from the native motif decorations sketched by students at the zoo. Include the dry riverbed pictures

(from Pre-Visit), and African animals.

Children's books to share and enjoy:

Anansi and the Moss-Covered Rock , By Eric Kimmel. Holiday House, New York, New York, 1988, ISBN 0-8234-0689-x. A delightful re-telling of a West African Tale which includes many of the animals in the Africa exhibit.

Why Mosquitoes Buzz In People's Ears, By Verna Aardema. Scholastic Inc., 730 NW Broadway, New York, NY 10003, by arrangement with The Dial Press, 1975, ISBN 0-590-10294-X. This story is a delightful legend that includes many animal characters.



# Chaperone Page

**"Water's the Matter?"**
**Unit 6: Africa**

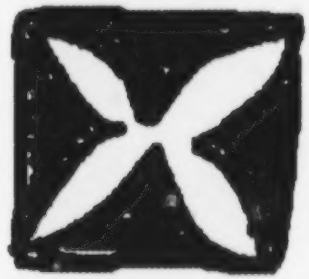
1. Read and discuss the black rhino photographic display. Show the students the pictures of the black horn ornaments and compare this to the ivory of elephants. Discuss the relationship of poaching to endangerment of animal species. Record the endangered sign at the exhibit in your count of endangered animals seen at the zoo (use Data Pages from Unit 2).

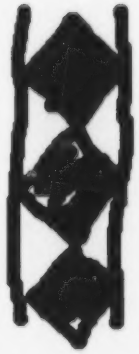
2. Continue your Camouflage/Coloration charts (use data pages from Unit 1) and endangered counts (from Unit 2) throughout the display.

3. Stop along the way and observe the examples of African native motif decorations. Discuss patterns that you find in the work. Have students sketch their favorite patterns on paper to include in the class mural at school.

**Materials**
Drawing paper
Crayons, charcoal, or pencils

4. More animal tracks will be found imbedded in the cement pathways of the Africa exhibit. Continue your "Animal Track" record using the activity sheets from Unit 2: "Bears, Bears, Bears," or do rubbings of the footprints found within the Africa display as discussed in Unit 2.





## Unit 7

# Northern Lights

### Alaska

### *Background*

**Aurora Borealis**

An Aurora is a phenomenon of light, visible at night, in the upper atmosphere of the earth. The Aurora Borealis can be observed in the Arctic and subarctic regions, the corresponding phenomenon in the southern hemisphere is called the Aurora Australis. When their light is bright enough to be distinguished, aurora usually appear to be yellowish-green. Depending on the position of the aurora in the atmosphere, other colors may be seen such as red, orange and violet.

Aurora occur in a variety of shapes and intensities. They can be seen as a long arc, or as a series of long, thin rays which lay parallel to each other, that extend upward into the atmosphere for several hundred miles. Another spectacular kind of display is called flaming aurora, in which wavelike patches of light start low in the north or south and rise high into the sky, disappearing within a second or so.

Auroras are related to the activity of the solar cycle and the magnetism of the earth. These associations suggest to scientists that the aurora results from the bombardment of the earth's upper atmosphere by electrically charged particles from the sun. Another name for the Aurora Borealis is the Northern Lights.

**Grizzly Bear**

Grizzly bears can be colored from almost black to golden brown. Their thick fur, along with a layer of fat, provide good insulation from cold winter weather. Grizzly bears DO NOT HIBERNATE! They have six-inch long claws for digging tubers and burrowing rodents, and stripping branches. Grizzlies will eat almost anything including mice, moose, fish, grass, berries, and bulbs. They need 25-35 pounds of food daily. They have a powerful body that can travel as fast as a deer. Their eyesight is poor, but their hearing is excellent.

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*(Background, cont.)*

Grizzlies are endangered due to loss of habitat (grasslands to cattle ranges) and hunting.

**Snowy Owl**

Snowy owls are colored mostly white as their name would indicate. They do have some dark spotting or barring, found most often in females and juveniles. They have large, widely set yellow eyes. Their head is large and rounded. Their feet and legs are heavily covered with feathers to provide insulation from the cold. Their voice is a deep, hoarse croak, a shrill whistle, or a loud, barking growl. Snowy Owls establish their territory by hooting.

**Gray Wolf**

Gray wolves are usually colored from grey to tawny-buff. Their coat consists of coarse guard hairs and shorter underfur and is longest in the mane. Wolves are extremely gregarious creatures who live within the highly developed social order of a pack, which may consist of 8-35 wolves with a dominant male leader and a dominant female. Dominant wolves are easily recognized by their behavior in that they hold their tails aloft. They define their territory by scent markings and vocalizations. When wolves hunt, they generally test herds, and attack the weak, old or sick animals. This helps to keep up the health of their prey, both physically and genetically. They eat anything from mice to moose, though their main diet is caribou.

**Unit Goals and Objectives**

Appreciate the beauty and diversity of the Alaskan landscape
- Observe the Aurora Borealis in the Alaska Exhibit
- View the Tundra slide show in the Alaska exhibit

Understand why some Alaskan animals are endangered
- Record "endangered" signs observed in the exhibit
- Discuss why these animals are endangered

Learn how wolves communicate through vocalization
- Listen to the recorded wolf calls at the display
- Discuss the meanings of the wolf calls heard
- Imitate wolf calls heard at the display

Understand adaptations to the cold northern climates
- Observe coats and feathers of Alaska animals on exhibit
- Discuss how these animals are adapted to the cold

### *Pre-Field Trip*

Read and discuss the background section, sharing with the students the information about the Aurora Borealis, and the animals they will see. Tell the students that one of the first displays that they see will be the Aurora Borealis shining over the tundra, and the sounds and sight of caribou.

## *At the Zoo*

**Aurora Borealis**

Stop, Look and Listen. the Aurora Borealis display will give you a feel for the vast, stark landscape of the tundra.

**Endangered Species**

Continue recording the endangered species signs observed in the Alaska exhibit. From the information found at these exhibits, discuss the reasons for endangerment of these animals.

**Musk Ox**

Find the Musk Ox. Ask the children why they think that a Musk Ox would need such a heavy coat of fur.

**Wolves**

Stop at the wolf call display. Without explaining the meanings of the different cries, allow students to push buttons and listen. Discuss why students think they wolves have so many different calls. Describe, from the information in the display, what each call is. See if the group of students can imitate the calls, one by one!

**Coloration/Camouflage: The Snowy Owl**

Continue the Coloration/Camouflage chart (from Unit 1) throughout Alaska, taking a special moment to ask students why they think a Snowy Owl's best camouflage is the white coloration with a few dark spots.

**Grizzly Bear**

Continue the track matching activity, or do a rubbing of the grizzly tracks (see Bears, Unit 2). Observe the grizzly bears's fur. Is it coarse or soft? Thick or fine? Do you think it would keep a grizzly warm?

**Slide Show**

The slide show takes about 10 minutes and is well worth the time. It represents each of the seasons of the tundra and shows how life can flourish there and then be stilled. The show gives you a powerful view of the beauty of the landscape, and also shows the variety of animals and plants that live in the tundra wilderness.

## *Post-Visit*

1. Read books about Alaska and Alaskan animals.

2. Show the video "The Bear", about the life of a grizzly cub who loses his mother in an accident. This film has no music - narration only. This film will generate excellent discussion and writing opportunities.

# Chaperone Page

**Unit 7**

**Alaska: Northern Lights**

### Aurora Borealis

Stop, Look and Listen. the Aurora Borealis display will give you a feel for the vast, stark landscape of the tundra.

### Endangered Species

Continue recording the endangered species signs observed (from Unit 2: "Bears, Bears, Bears) in the Alaska exhibit. From the information found at the exhibits, discuss the reasons for endangerement.

### Musk Ox

Find the Musk Ox. Ask the children why they think that a Musk Ox would need such a heavy coat of fur.

### Wolves

Stop at the wolf call display. Without explaining the meanings of the different cries, allow students to push buttons and listen. Discuss why students think they wolf has so many different calls. Describe, from the information in the display, what each call is. See if the group of students can imitate the calls, one by one!

### Coloration/Camouflage: The Snowy Owl

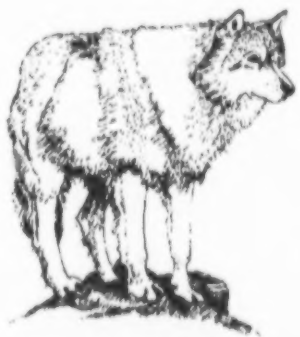
Continue the Coloration/Camouflage chart (from Unit 1: "Now you See It") throughout the Alaska exhibit, taking a special moment to ask students why they think a Snowy Owl is the white with a few dark spots.

### Grizzly Bear

Continue the track matching activity, or do a rubbing of the grizzly tracks (see Bears, Unit 2) Observe the grizzly bears fur. Is it coarse or soft? Thick or fine? Do you think it would keep a grizzly warm?

### Slide Show

The slide show takes about 10 minutes and is well worth the time. It represents each of the seasons of the tundra and shows how life can flourish there and then be stilled. The show gives you a powerful view of the beauty of the landscape,and also shows the variety of animals and plants that live in the tundra wilderness.



# Appendix
# K-2 At the Zoo: Essential Learning Skills
## Correlation to the Oregon Essential Learning Skills
(Oregon Department of Education ELS, adopted December, 1985))

The following Oregon Essential Learning Skills (Oregon Department of Education, adopted December, 1985) are addressed by the activities in **K-2 At the Zoo**:

| Unit | Essential Learning Skills |
|---|---|
| I. Now You See It Now You Don't | 1.5c; 1.6b,c; 2.3a,c,d,f,i; 3.1b; 4.1a; 4.2a,c; 4.3a; 5.1a,b,c,e; 5.3a; 5.4a,b; 6.1a; 6.3a |
| II. Bears, Bears, Bears | 1.5c; 1.6b,c; 2.3a,c,d,f,i; 3.1b; 4.1a; 4.2a,c; 4.3a; 5.1a,b,c,e; 5.3a; 5.4a,b; 6.1a; 6.3a |
| III. All Dressed Up, and No Place to Go! | 1.5c; 2.3a,c,d,f,i; 3.1b; 4.1a; 4.2a,c; 4.3a |
| IV. Not Just Hanging Around! | 1.5c; 2.3a,c,d,f,i; 3.1b; 4.1a; 4.2ac; 4.3a |
| V. Ever See an Elephant Fly? | 1.5c; 2.3a,c,d,f,i; 3.1b; 4.1a; 4.2a,c; 4.3a |
| VI. Water's the Matter? | 1.5c; 2.3a,c,d,f,i; 3.1b; 4.1a; 4.2a,c; 4.3a |
| VII. Northern Lights | 1.5c; 2.3a,c,d,f,i; 3.1b; 4.1a; 4.2a,c; 4.3a |

# K-2 At the Zoo: English Language Arts

## Correlation to the Oregon Comprehensive Curriculum Goals

(Oregon Department of Education CCG's, English Language Arts, Spring 1986)

The following Oregon Comprehensive Curriculum Goals for English Language Arts (Oregon Department of Education, Spring, 1986) are addressed by the activities in **K-2 At the Zoo** as listed below:

| Unit | Common Curriculum Goals |
|---|---|
| I. Now You See It, Now You Don't | 1.3d, e; 2.2 e, j, k; 2.3a; 2.7 a,b 2.8a, b; 2.10 a; 2.16a; 2.15a, c |
| II. Bears, Bears, Bears | 1.12c; 1.13d,e; 1.14a; 2.15a,c; 2.16; 2.2e,j,k; 2.3a; 2.4a,b,c,e; 2.7a,b; 2.8a,b; 2.10a; 2.15a,c; 2.16a |
| III. All Dressed Up, and No Place to Go! | 1.6a; 1.13d,e; 2.2e,j,k; 2.3a; 2.10a; 2.15a,c; 2.16a |
| IV. Not Just Hanging Around! | 1.6a; 1.13d,e; 2.2e,j,k; 2.3a; 2.10a; 2.15ac; 2.16a |
| V. Ever See an Elephant Fly? | 1.6a; 1.13d,e; 2.2e,j,k; 2.3a; 2.10a; 2.15a,c; 2.16a |
| VI. Water's the Matter? | 1.6a; 1.13d,e; 2.2e.j.k; 2.3a; 2.10a; 2.15a,c; 1.16a |
| VII. Northern Lights | 1.6a; 1.9a; 2.2e,j,k; 2,3a; 2.10a; 2.15a,c; 2.16a |

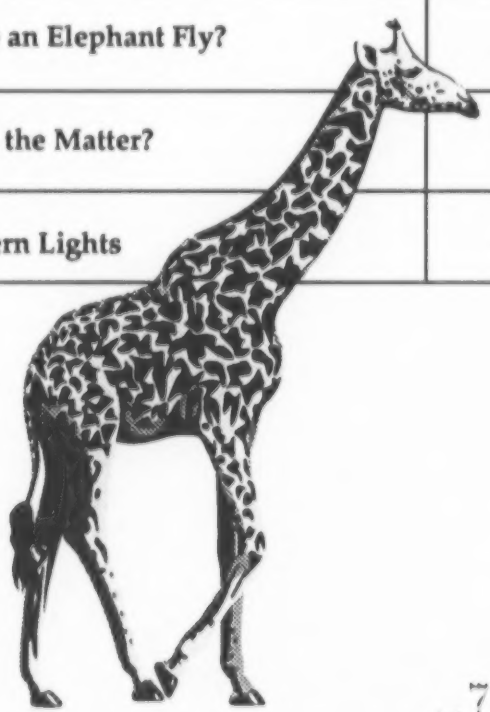
# K-2 At the Zoo: Mathematics

## Correlation to the Oregon Comprehensive Curriculum Goals

(Oregon Department of Education CCG's, Mathematics, October 1990)

The following Oregon Comprehensive Curriculum Goals for Mathematics (Oregon Department of Education, October 1990) are addressed by the activities in **K-2 At the Zoo** as listed below:

| Unit | Common Curriculum Goals |
|---|---|
| I. Now You See It, Now You Don't | 1.1c (k-2); 3.1a,b (k-2); 4.1c,d (k-2); 6.1d,e,f (k-2); 7.1a (k-2); 7.1d (k-2); 8.4c,d,e (k-2) |
| II. Bears, Bears, Bears | 1.1c (k-2); 6.1d,e,f (k-2); 7.1a,d (k-2); 8.4c,d,e (k-2) |
| III. All Dressed Up, and No Place to Go! | 4.1c (k-2); 7.1a (k-2); 8.4c,d,e (K-2) |
| IV. Not Just Hanging Around! | 4.1c (k-2); 7.1a (k-2); 8.4c,d,e (K-2) |
| V. Ever See an Elephant Fly? | 8.4c,d,e (k-2) |
| VI. Water's the Matter? | 4.1c,d (k-2); 8.4c,d,e (k-2) |
| VII. Northern Lights | 8.4c,d,e |



# K-2 At the Zoo: Science

## Correlation to the Oregon Comprehensive Curriculum Goals

(Oregon Department of Education CCG's, Science, June, 1989)

The following Oregon Comprehensive Curriculum Goals for Science (Oregon Department of Education, June 1989) are addressed by the activities in **K-2 At the Zoo** as listed below:

| Unit | Common Curriculum Goal |
|---|---|
| **I. Now You See It, Now You Don't** | **1.5b (grade k); 1.6a (grade 2); 2.1a (k-2); 2.3a (2); 2.6a (k-2); 2.8c (k-2); 2.12a (2); 2.15a (k-2); 4.1a (k-2); 4.3a (k-2); 5.1a (k-2); 6.4a,b,c (k-2** |
| **II. Bears, Bears, Bears** | **1.5b (k-2); 1.6a (2); 2.1a (k-2); 2.3a (2); 2.6a (k-2); 2.8c (k-2); 2.12a (2); 2.15a (k-2); 4.1a (k-2); 4.3a (k-2); 5.1a (k-2); 6.4a,b,c (k-2)** |
| **III. All Dressed Up, and No Place to Go!** | **1.5b (k-2); 1.6a (2); 2.1a (k-2); 2.3a (2); 2.6a (k-2); 2.8c (k-2); 2.12a (2); 2.15a (k-2); 4.1a (k-2); 4.3a (k-2); 5.1a (k-2); 6.4a,b,c (k-2)** |
| **IV. Not Just Hanging Around!** | **1.5b (k-2); 1.6a (2); 2.1a (k-2); 2.3a (2); 2.6a (k-2); 2.8c (k-2); 2.12a (2); 2.15a (k-2); 4.1a (k-2); 4.3a (k-2); 5.1a (k-2); 6.4a,b,c (k-2)** |
| **V. Ever See an Elephant Fly?** | **1.5b (k-2); 1.6a (2); 2.1a (k-2); 2.3a (2); 2.6a (k-2); 2.8c (k-2); 2.12a (2); 2.15a (k-2); 4.1a (k-2); 4.3a (k-2); 5.1a (k-2); 6.4a,b,c (k-2)** |
| **VI. Water's the Matter?** | **1.3a (k-1); 1.5b (k-2); 1.6a (2); 2.1a (k-2); 2.12a (2); 2.15a (k-2); 2.3a (2); 2.6a (k-2); 2.8c (k-2); 4.1a (k-2); 4.3a (k-2); 5.1a (k-2); 6.4a,b,c (k-2)** |
| **VII. Northern Lights** | **1.3a (k-1); 1.5b (k-2); 1.6a (2); 2.1a (k-2); 2.12a (2-3), 2.15a (k-2) 4.1a (k-2), 4.3a (k-2), 6.4a,b,c (k-2)** |